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NATIONAL PETROLEUM NEWS

NEW Refining Technology EDITION

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OCTOBER 20, 1937

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In The Cast of the Madison Oil Drama

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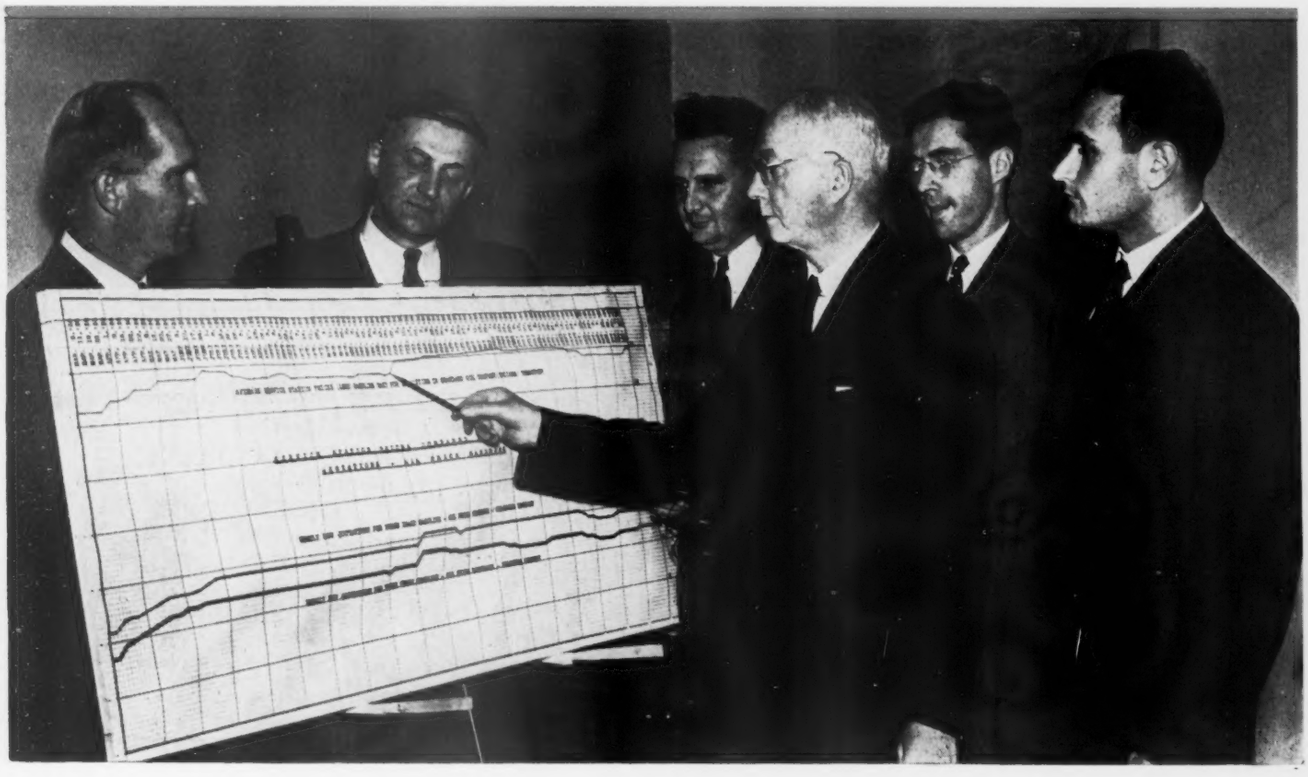
Five well known independent marketers waiting to testify in the anti-trust suit in Madison. Left to right, M. F. Mayer, Mayer Oil Co., Monroe, Wis.; A. J. Fiore, president, Fiore Coal and Oil Co., Madison, Wis.; Harry Fee, president, The Fee Oil Co., Waterloo, Ia.; W. H. Wingrove, general manager, president, Wingrove Oil Co., Sheboygan, Wis. and Elmer H. Pedley, D. B. Pedley & Son, Kenosha, Wis.



(Acme Newspapers Inc.)

The staff of federal prosecutors at Madison examines a chart of gasoline market prices based on NATIONAL PETROLEUM NEWS' Oil Price Handbook. Pointing at the chart is William R. Crawford, special prosecutor appointed for this case. Others left to right are, Harold A. Hanson, W. B. Watson Snyder, John Henry Lewin, Grant W. Kelleher, Hammond E. Chaffetz.

LAST MINUTE
OIL NEWS SECTION

News By Teletype From 4 News Bureaus

National Petroleum News

News From Oil Industry Everywhere

VOLUME 29 WEDNESDAY, OCTOBER 20, 1937 NUMBER 42

U. S. WITNESS DESCRIBES "BUYING" PLAN

Amended Profits Tax Is Forecast By Congressmen

N. P. N. News Bureau

WASHINGTON, Oct. 18.—Relief from the undistributed profits tax, especially for small corporations, or those heavily in debt, was forecast today after statements by leaders of the House ways and means committee and the joint Congressional committee on taxation.

However, it is not expected that the new tax legislation will emerge as the thorough overhauling which was at first expected, but rather as another patchwork revision of existing laws.

Both Congressmen Fred M. Vinson, Kentucky, chairman of the joint committee, and Robert L. Doughton, North Carolina, chairman of the ways and means committee, have indicated they favor revision of the undistributed profits tax to protect the small corporation. Discussions of the two committees will carry on during the special session of Congress, but it is not expected the tax subject will be presented on the floor until the regular session starts in January.

The program as outlined to date includes a series of conferences between Treasury officials and members of the joint committee, of which Doughton is an ex-officio member, and recommendations by the joint committee to the Ways and Means Committee of revisions for existing tax laws.

Treasury Investigation

Meanwhile, Treasury tax experts have completed an exhaustive study of the federal tax system, with the purpose of working with both the joint committee and the ways and means group in their studies. It is understood the Treasury experts have interviewed many business men in an effort to uncover inequities in the undistributed profits tax, and will work with the committee heads to eliminate these. There will be no repeal of this tax, it was definitely asserted.

At the same time, Chairman Doughton has made it plain that there will be no repeal of the so-called "nuisance taxes," which include the federal tax on gasoline and lubricating oils, as well as the excise levies on tires and tubes, the tax on transportation by pipeline, etc. These taxes were extended for a two-year period after the previous expiration date, June 30, this year, but some hope had been held they might be repealed. On this subject, Doughton admitted that a good case could be made out for repeal of the taxes, but that the government needed revenue so badly that they would have to be retained, in all likelihood.

Tank Car Buyer Testifies at Madison Of Mid-Cont. Refiners' Meetings

By Teletype
By A. M. PETTY
N.P.N. Staff Writer

MADISON, Oct. 19.—Thirteen meetings of a so-called tank car stabilization committee in 1935-36, at which arrangements were allegedly made for major-company buying of distress gasoline from independent refiners in the Mid-Continent, were described late today in the "conspiracy" trial here by Wm. Paul Jacobi, of Tulsa, tank car buyer for Socony-Vacuum Oil Co.

Jacobi, first major company employe to be called as a witness in the case, took the witness stand the afternoon of Oct. 18, following on the heels of a government man who testified as to price trends and the "similarity" of price provisions in jobber contracts.

Last week, there was a parade of jobber witnesses.

The Socony-Vacuum buyer named individuals he alleged he had seen at the St. Louis meeting and testified about a "piece of paper" which he said was prepared by A. V. Bourque, secretary of the Western Petroleum Refiners Assn., which contained a list of independent refiners with figures after their names purporting to be amounts of distress gasoline on hand in March, 1935.

He told about a "plan" under which the major companies represented at the meeting, and others to be contacted later, allegedly were to take as much distress gasoline as they could off the small refiners at the "going market price."

In his testimony Oct. 19, Jacobi testified as to a subcommittee, composed of himself, Robert W. McDowell, of Mid-Continent Petroleum Corp., and O. J. Tuttle, of Empire Oil & Refining Co., (Cities Service) which, he said, met at frequent intervals between March and June, 1935, to "arrive at what we thought was a fair market price" to be paid the following week to independent refiners for their distress gasoline.

Jacobi testified that the trend of prices he paid in 1935-36 corresponded to the trend of price quotations of *Platt's Oilgram*, Tulsa edition, as charted by the government.

Judge Stone, at the request of counsel for the trade journal defendants, ruled that, for the present, they would not be bound by Jacobi's testimony.

It was brought out Oct. 19, that Jacobi, in appearing before the Madison grand juries which returned the oil indictments, had claimed immunity — "and

(*Continued on page* 10)

N.O.M.A. Seeks New Laws To Protect Independents

By E. L. BARRINGER
CHICAGO, Oct. 18

Changes in marketing practices through legislation continue to be sought by the National Oil Marketers Assn., as expressed in resolutions adopted at its third annual convention and trade exhibit last week in Chicago.

Resolutions ranged from urging continuation of the federal investigations of marketing practices on the East and West coasts, through proposing legislation affecting the production branch of the industry.

Highlight of the three-day convention was the address at the banquet Oct. 13 by Congressman Fred Biermann, Iowa, author of the bill now in Congress to separate marketing from other branches of the oil industry.

In selecting the incoming official N.O.M.A. family Roy R. Fisher, Detroit, Argo Oil Corp., was elected president. Two new directors were placed on the board, and 14 were re-elected.

Three-Part Program

The three-day program shaped into three divisions. First, were addresses reviewing the association's legislative program and the relation of production to marketing. Second, were the addresses on jobber operating problems. Third, the discussion of proposed association activity for the future, which started with the banquet address and followed with a closed members' meeting the next morning when resolutions were adopted.

The president of N.O.M.A. for two terms, M. B. Whiting, Clifton Forge, Va., Whiting Oil Co., opened the convention Oct. 12 with an annual review. (See N.P.N. Oct. 13, p. 17)

The general theme on the association's program was continued the second day with an address by Clarence Schock, Mt. Joy, Pa., Schock Independent Oil Co., on conservation and

(*Continued on page* 18)

Jobbers Are Witnesses In Trial Oct. 13-15

(*Continued from page* 9)

he was not indicted," H. E. Lewin, government attorney, pointed out.

Jacobi was to return to the stand Oct. 20.

In the indictment, the government charges a conspiracy to artificially raise the tank car market for gasoline in 10 midwestern states through so-called buying.

Last Week's Proceedings

Last week's proceedings was characterized as a parade of jobber witnesses. Government counsel questioned them to bring out "similarity" of price provisions in their contracts. It developed that all of the jobbers' contracts were based either on the average of the average high and low price quotations published by the Chicago Journal of Commerce and Platt's Oilgram, Tulsa edition; or on the Journal alone.

Such similarity is evidence of collusion and conspiracy among the defendant companies, government counsel asserted.

Over repeated objections of oil company defense counsel, government attorneys questioned the jobbers about their conversations with their suppliers and other companies in their efforts to obtain more than a 5.5-cent margin.

Nearly all of the jobbers said they were members of the National Oil Marketers Assn., whose complaint to the Department of Justice in 1935 is generally credited with being largely responsible for the Madison grand jury investigation resulting in the oil conspiracy indictment.

All of the witnesses last week, jobbers and brokers, denied they had ever to their knowledge handled "hot" oil. Several jobbers added the qualification, "if we did, we received it from our major company supplier."

Lanzer On Stand Oct. 13

Lanzer took the witness stand Oct. 13. But before the jury was brought in there was further argument over admissibility of telegrams about East Texas marketing conditions exchanged between Lanzer and John M. Bradshaw, Dallas, who had acted as Lanzer's purchasing agent there. Judge Stone ruled out the telegrams for the time being. Bradshaw has been called as a witness.

At the close of the Oct 12 afternoon session (See N. P. N., Oct. 13) Lanzer had "surprised" government counsel by not being able to testify about his sales without his records.

With the jury in the box Oct. 13, Lanzer gave the testimony desired about his sales April 23-May 1, 1935. Out of 26 tank cars 23 were sold "below the low of the Chicago Journal of Commerce" with some as much as 0.375 cent below, he said.

Lanzer testified that Keith Fanshier, petroleum editor of the Chicago Journal of Commerce, had called him only two or three times in the last six or seven years and none at all in the 1935 period referred to.

Affect of Connally Law

Donovan, in cross-examining Lanzer, brought out that of the 60 to 70 per cent of the total gasoline output of the Blackwell (Okla.) and Lemont (Ill.) refineries of Globe Oil & Refining Co., which the witness said was taken by W. H. Barber Co. at 0.25 cent under the latter's selling price, nearly half went to oil co-operatives.

The oil company defense counsel also drew from the witness the statement that the Connally "hot" oil law had practically eliminated the movement of gasoline made from "hot" oil out of Texas. Lanzer said he had never purchased any "hot" oil.

Counsel Clash

During the cross-examination there were repeated clashes between counsel, with Hammond E. Chaffetz, government attorney, once charging Donovan with "putting ideas in the mind of the witness."

There was prolonged argument as Lewin sought to draw from Lanzer the witness' reasons for the market trend in 1935-36. It carried over into the afternoon session of Oct. 13.

Lanzer said that the price rise in March, 1935, was, in his opinion, due to a number of factors, listing the Connally Law, spring buying by jobbers, general advance in all commodity prices, balancing of supply and demand, and buying by major companies.

In the afternoon, Lanzer was again asked the same question and gave somewhat the same answer, mentioning "buying by certain interests."

Lewin asked him what he had in mind and the witness replied that besides jobbers buying he also "understood that the major companies were also buying at that period."

When Lewin asked the witness if he had in mind a "program" he precipitated a storm of objections from oil company defense counsel.

Wm. P. Crawford, another government attorney, jumped in to tell the court: "We are frankly surprised at the answer of this witness, and we have very good reasons for that surprise, which we will assert, if permitted."

The objections were overruled and the witness testified he recalled a buying program was in operation during the code period and pointed out that the code was still in effect at that time (March, 1935); but he was not familiar with the nature or details of it, he added.

Thereupon, Lewin began reading from Lanzer's testimony before the Madison grand jury 18 months ago.

All the while there was a continuous stream of objections. Col. Donovan insisted that it was an attempt by government counsel to "impeach his own witness."

Witness "Hostile"

"It is rather apparent to the court," Judge Stone replied, "that this witness may be just a little hostile right now."

Lewin then read what he said was Lanzer's grand jury testimony about a "buying program supported by the major companies."

Judge Stone shut Lewin off after repeated objections were made. He ruled that Lanzer's testimony "this afternoon was similar in all respects to that before the grand jury. There is nothing in his grand jury testimony that impeaches his testimony here."

Lewin then tried again, but unsuccessfully, to get in the Lanzer-Bradshaw telegrams.

Next witness was A. C. Breuch, life-long resident of Madison, who operates the Pennsylvania Oil Co. of Wisconsin, an independent jobbing company. His annual gallonage is 3,250,000 and company's capitalization, $450,000, Breuch testified.

Breuch said he handles Barnsdall products and his contract is based on the average of the high and low price quotations as published by the Chicago Journal of Commerce.

Dissatisfied With Contract

Dissatisfied with his contract, Breuch said he went to Tulsa about two years ago and talked with E. B. Reeser, Barnsdall president and a defendant here.

Over objection by Donovan, Breuch quoted Reeser as saying "in substance", as follows: "I know you can't make money on a 5.5 cent margin but I can't do anything about it. If better contracts are written I will be glad to give you a better contract."

Lewin then questioned the Madison jobber about the trend of gasoline prices, as shown by the witness' records, for 1933 to 1936.

In 1933, according to Breuch, there were 74 changes in the "regular" grade quotations of the Chicago Journal of Commerce; and 72 in 1934.

Turning to 1935, he testified that there were four changes in January and one in February. From March 1 to June 7, there were 15 changes—"all up," he said.

There was no change from June 7, 1935 to Jan. 13, 1936, Breuch testified.

"You mean to say," Lewin demanded, "that through the rest of June to July, through August, September, October, November and December and into January, there was no change?"

Lewin's voice rose higher and higher as he tolled off the months in his question until finally it was virtually a shout.

Donovan in a flat-toned voice interposed the objection that the witness had already testified on this point.

Price Trend

In January, 1936, Breuch continued, there were five changes —all up—and two changes in February, both down. The price changed once in March, 1936, not at all in April, a slight break in May, no change in June or July, three changes in August, three in September, one in October, one in November, and one in December — prior to the indictment, Dec. 22, 1936, he added.

At the opening Oct. 14, Breuch was turned over for cross-examination and almost immediately there was a sharp clash as Donovan tried to question the witness about "depressed conditions" in 1933. The jobber admitted that he had bought gasoline cheaper in 1933 than ever before in his 18 years in the oil business.

Judge Stone sustained the government's objection when Donovan asked the witness if he knew about the government setting up stabilization committees to relieve independent refiners.

Price Dropped 0.0075 Cent

General S. T. Lawton, attorney for the Chicago Journal of Commerce, said that the "break" in gasoline prices in May, 1936, which government attorneys have attempted to link to the appearance of jobbers before the Madison grand jury at that time, amounted to

Jobbers Describe Contracts With Refiners

a drop in the Journal's average from 6.1250 cents to 6.1175 cents.

Harry Fee, jobber of Waterloo, Iowa, was the next witness, with Chaffetz examining. Fee said his 1936 gallonage, according to tax records, was 306,000 gallons. His contract with Socony-Vacuum Oil Co., Inc., was based on the "average of the averages" of the Chicago Journal of Commerce and Platt's Oilgram, Tulsa edition, he said.

Much of Fee's testimony was devoted, at Judge Stone's request, to an ABC explanation of oil marketing from the jobber's angle, including the operation of 5.5-cent split marginal contracts and the Iowa Plan.

Fee said he had suffered because the advance in retail prices had lagged behind rises in the tank car price of gasoline he paid.

Answering the now-familiar line of questioning about attempts to get a "better deal", Fee said he questioned Ray Merring, Kansas City official of White Eagle Refining Co. (Socony-Vacuum), who told him, he said, that the company had only one jobber contract and that he didn't see how he could give him a better one.

"If a better margin is available, we will see that you get it," the Waterloo jobber quoted Merring as saying.

Peterson On Stand

First afternoon witness of Oct. 14 was Oscar L. Peterson, Chicago, of George C. Peterson Co., jobber and broker, with 15,000,000 gallons a year business.

Donovan objected, as usual, to introduction of the jobber's contract with Socony-Vacuum and to questions about conversations with the supplier and other companies about obtaining a better margin than the 5.5-cent margin provision he said he had. The contract, Peterson said, was based on the average of the averages of the Chicago Journal of Commerce and Platt's Oilgram, Tulsa edition.

Donovan argued that Chaffetz' questioning suggested the inference that there was a charge of an agreement among the defendant companies to have "these particular kinds of contracts." He said it ought to be made clear that no such charge is made in this case.

Chaffetz retorted that Donovan had made "several speeches to the jury on the subject" as the point had come up. He reiterated that there was no charge in the indictment about an agreement respecting jobber contracts.

"The charge is," Chaffetz continued, "that these contracts are fairly uniform, that they are used by the defendant companies, and that most of them have identical provisions about determining the basic price by reference to the defendant market journals."

The government attorney said that the defendants well knew this fact when they entered into the alleged conspiracy, one of the purposes of which, he added, was "to raise the price of gasoline to the jobbers as determined by these contracts."

Jobber Contracts "Uniform"

Purpose of the questioning objected to, Chaffetz explained, was to show that it was not the jobbers who solicited this type of contract, but the defendant major companies and show also that the contracts were in fact uniform.

Peterson, the witness from Chicago, said he contacted Empire (Cities Service), Phillips, Skelly and Continental in an effort to get a better contract.

He quoted E. C. Steffey, Chicago tank car salesman for Empire Oil & Refining Co., as saying, "Our contract is no different from the one you have now; in fact, it is the general contract that is being used by most suppliers."

Steffey, the witness added, suggested as an "inducement" that perhaps the company could supply Peterson with fuel oil "to a degree that would make quite a difference in your balance sheet."

Later, Steffey came back and said that the gasoline deal would duplicate Cities Service distribution in Chicago, Peterson testified, adding that he did make a fuel oil contract with Empire.

Peterson, by agreement of counsel, was excused after a brief cross-examination, to re-

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Price Basis of Contracts Is Told Court

turn later with records of his sales.

Harry Miller Testifies

Next witness was Harry E. Miller, oil jobber from Festus, Mo., selling Barnsdall products. When he tried to get more margin, Miller said G. F. Racette, Barnsdall official, offered to lease his bulk plant and make him agent. The Missouri jobber said he turned it down "because that would make me a commission agent and put me back where I started 27 years ago."

Miller said he went to E. B. Reeser, president of Barnsdall and told him he was losing money on a two-cent margin.

"Well, Harry," Miller quoted Reeser as replying, "it is a sad state of affairs when our good customers are losing money selling our products."

Miller said he pointed out that he was losing money even on a "normal" market and asked why Barnsdall couldn't do something about it. Reeser replied, according to Miller, that he "couldn't change that contract one iota."

Miller said he had tried Mid-Continent, Lubrite (Socony-Vacuum), Tide Water and Continental but could not get a better contract.

Donovan waived cross-examination.

"Former Oil Jobber"

Last witness on Oct. 14 was a "former oil jobber"—J. H. Middleton, Bowling Green, Mo., who operated the Tri-County Oil Co. up to Sept., 1937.

Donovan objected to presentation of Middleton's contract with Tide Water Oil Co. of Oklahoma, pointing out that the company was not named as a defendant and was dissolved Nov. 12, 1936, or prior to date of the indictment under which defendants are being tried. But was overruled. The contract was based on the average of the averages of Chicago Journal of Commerce and Platt's Oilgram.

Middleton related how eight or ten Missouri jobbers had pooled their purchases and made contact with Deep Rock Oil Corp. and Empire for a better contract than 5.5 cents; but they could do no better, he said.

Oct. 15 Session

First witness at the morning session Oct. 15 identified himself also as a "former oil jobber". He was Herbert F. Davis, Sullivan, Ind., formerly of Wabash Oil Co. Up to May, 1937, he said he had a contract based on the average of the averages of the two trade journals with Lubrite division of Socony-Vacuum Oil Co. Inc.

Davis testified that, under an "exchange" arrangement, sometimes his gasoline under the Socony-Vacuum contract was shipped from Ohio Oil Company's refinery at Robinson, Ill., and that he was billed for railroad freight from Group 3 (Oklahoma). He said the gasoline was made to Socony-Vacuum specifications.

H. H. Falder, Rock Island, Ill., of Midway Oil Co., with a contract with Empire (Cities Service) but selling gasoline under his own brand, was the next witness.

In 1935, he said he negotiated a new contract with Empire at 0.25 cent under the average of the Chicago Journal of Commerce: and in 1936, a new contract was made at 0.25 cent below the low of the C. J. C., he added.

Relating the conversation, which he said occurred at the time with O. J. Tuttle of Empire, Falder quoted Tuttle as follows:

"Quarter Below Low"

"While I haven't seen all (jobber) contracts, I have seen a great many. They are all exactly alike, even to the dotting of the I's and crossing the T's. But we feel that the jobber is not getting enough margin so we are willing to go to a quarter below the low."

Prior to these two contracts, Falder said he had a contract, made in 1931, based on the average of the Chicago Journal of Commerce and NATIONAL PETROLEUM NEWS.

General Lawton, attorney for the Chicago Journal of Commerce, later pointed out that Falder's purchases were under contract and were therefore not spot transactions.

J. Marshall Thompson, De Soto, Mo., of General Oil Products, Inc., jobber, next testified about his contract with Continental Oil Co., based on the average of the averages of the Chicago Journal of Commerce and Platt's Oilgram, Tulsa edition. The contract had a 6-cent guarantee which went to 5.5 cents when dealer margins dropped to 3.5 cents, he said.

Thompson was a member of the delegation from the National Oil Marketers Assn. which, on June 18, 1935, called upon Attorney General Homer S. Cummings and asked that the justice department's anti-trust division investigate and determine if there were any secret agreements among refiners to fix jobber margins.

This, however, was not brought out in his testimony, although, like nearly all jobber witnesses so far, he said he was a member of the N. O. M. A.

Thompson also testified that he had tried unsuccessfully to get a better margin from his supplier and from other major companies.

Asked by Judge Stone whether his contract required him to sell at a specified dealer tank wagon price, Thompson said no, but he had to sell at a price competitive with that posted by Standard of Indiana. Thompson also testified that he had never heard of a dealer trying to sell at a higher price than the Indiana company's service station price in 1935-36.

J. H. Crowley, Beloit, of Goodall-Crowley Oil Co., next jobber to testify, said he is now buying in the open market but had a contract with Mid-Continent Petroleum Co. from 1933 to 1937.

"Confidential 0.5 Cent"

Crowley said he told Walter Herr, Mid-Continent official, that he couldn't get along on a 5.5 cent margin and suggested a "confidential" 0.5 cent, but without result.

Later, he testified that his company, a corporation, had a "slight loss" in 1935. Donovan then brought out that Crowley, as president, drew a salary of $5000 in 1935 and $8000 in 1936.

Donovan asked the jobber what he would do if one of his dealers asked for more margin. The witness replied, "I would tell him I could not afford to do it."

After the noon recess Oct. 15, William J. O'Brien, Superior, Wis., of O'Brien Oil Co., jobber, was called to the stand. His contract with Empire called for a 5.5-cent split marginal contract, he said.

"Like all jobbers," O'Brien testified, "we complained about the narrow spread and asked for a better contract, but couldn't get it," he said relating his experience with his supplier and another major company.

Jobber's Expenses

O'Brien went deeply into the expenses which a jobber faces in his operations—safety measures, credit risks and other items which must come out his two-cent margin.

Cross-examination became sharp as Donovan demanded the jobber answer "yes or no" as to whether his contract required him to sell at any particular price to dealers.

The jobber-witness tried to point out that he had to sell at the same tank wagon price as Standard of Indiana to preserve his two-cent margin, but Judge Stone limited him to a "yes or no" answer, and he replied in the negative.

Donovan made the point that jobbers generally allowed their dealers 3.5 cents in O'Brien's territory. The witness replied yes, and interjected "but the major companies do also."

The next witness, M. H. Tiege, Stoughton, of Wisconsin Petroleum Co., handling Mid-Continent products said his contract called for a flat 2 cent guarantee.

Final witness of the afternoon session Oct. 15 was W. J. Miller, special agent of the Federal Bureau of Investigation, who said he was an accountant before going with the Department of Justice.

From a survey he made, Miller testified that of 1729 jobber contracts written in 1935 in Standard of Indiana territory by the defendant oil companies, 1461 were based on the average of the averages of the Chicago Journal of Commerce and Platt's Oilgram, Tulsa edition. Besides these, 100 contracts were based on the Journal, none on the Oilgram alone, and 168 on some other basis, the G-Man testified.

Of the 168 on some other basis in 1935, 122 were contracts made by Sinclair Refining Co. and were based on "seller's open market tank car price," he added. One Sinclair contract had a supplemental provision, for that contract alone, which defined this price at the low of the Chicago Journal of Commerce, he said.

Not including figures from Mid-Continent Petroleum Co., Socony-Vacuum Oil Co. or Continental Oil Co., Miller testified that of 537 jobbers' contracts made in 1936 up to Sept. 30, 429 were on the average of the averages of the two defendant trade journals; none on the Oilgram alone; and 18 on some other basis, he continued. Specimen contracts from the three companies, for which no totals were available, were based on the average of the averages, he said.

Returning to the stand on Oct. 18, Miller summarized his testimony on this, pointing out that 84.5 per cent of the 1935 jobber contracts were based on the average of the averages; and 79.9 per cent in 1936.

Donovan on cross-examina-

G-Man Testifies On Price Charts

(*Continued from page* 12)

tion brought out that there were several provisions in each contract which limited or qualified operation of the so-called basic price.

S. O. Indiana Has One Jobber

Weymouth Kirkland, attorney for the Standard of Indiana defendants, then questioned Miller to show that the Indiana company from 1931 to 1936 had written only two jobber contracts—one of them subsequently cancelled—and that neither one made any reference to any trade journal's prices.

The prosecution then presented, through Miller, a number of charts or graphs based on data purporting to come from Oil Price Handbook, published by National Petroleum Publishing Co.

There was considerable argument over admission of the first chart, with defense counsel objecting that the chart was not based on the average of the high and low price quotations but only on the "low" as published in Platt's Oilgram, Tulsa edition, each Monday. Judge Stone admitted the chart after directing that the label "weekly" be changed to "Monday" prices.

Chaffetz contended that defense counsel were trying to say how the government should run its case.

Price Trends

Miller pointed out the market trend, with Chaffetz emphasizing its upward trend or stationary character at different periods in 1935-36. For third grade, the Oilgram's Tulsa edition, Miller testified, showed a price rise of 1.375 cents from March 4, 1935 (approximate date of the conspiracy alleged in the indictment) to July 29, 1935. Compared with March 4, 1935, price, there was a rise of 1.875 cents up to Jan. 17, 1936; and of 1.375 cents up to Dec. 20, 1936, or a few days prior to return of the indictment, he testified.

During the afternoon session of Oct. 15, Miller presented a chart purporting to show a comparison of Chicago Journal of Commerce and Platt's Oilgram prices in 1935-36.

In his questioning, Chaffetz emphasized that "on each Monday from June to December, 1935" the two trade journals published "identical" prices.

On cross-examination of Miller, it was brought out by

(*Continued on page* 21)

Thompson Hints Cut In November Texas Allowable

By Teletype
N. P. N. News Bureau

TULSA, Oct. 19. — Oil operators in the Mid-Continent are looking forward with more than usual interest to the monthly market demand hearings in the oil producing states in the southwest at which November allowables will be set.

Preliminary to the monthly statewide hearing in Texas, Col. E. O. Thompson, commission member, issued a statement indicating pointedly that allowable production in Texas will again be reduced.

"No amount of statistics alters the fact that lately business over the nation has appreciably slackened," he said. "Prices of basic commodities have dropped materially. Thousands of men have been laid off. All this affects market demand of oil adversely.

"We cannot under the law allow oil to continue to build up in above ground storage and waste the valuable lighter ends. It can be produced later when and as needed. It is wiser to not over-produce when over-production means waste and loss for those who produce it and to the state. The consumer is best protected by allowing only enough oil to be produced to meet consumer demand.

"Smaller allowables for each well is the only way the commission can keep production within the limits of market demand.

"I suppose the allowables will finally go automatically so low that drilling will cease to be profitable. Then and then only will the drilling slow down.

"It seems to me that this is a simple statement of fact and oil producers of the nation should be prepared for lower allowable production quotas through the months from now until spring. Operators can figure this out just as well as we can, if they really want to do it."

Texas will start with its meeting Oct. 20 before the Texas Railroad Commission. The East Texas field is certain to bounce back into the limelight. The water survey in that field is expected to be completed by that date, along with the "dead" well survey. The water survey has been in progress for some time, but the "dead" well survey was launched following the September hearing.

At that time it was suggested to the commission that perhaps one way to reduce the East Texas allowable and still stay "within the law" would be to check the wells in the field with a view to determining how many actually were "dead" but were still listed as "producers," while other wells on the same lease made up the difference. The commission promptly put a staff of engineers in the field and began the survey.

Arkansas Hearing

The Arkansas Board of Conservation has set Oct. 22 for a hearing on the Miller county field.

The Kansas Corporation Commission has set Oct. 27 for its hearing at Wichita. More than usual interest will be shown in this hearing due to two factors which have developed in that state recently.

One is the suit filed in Rice county district court against the commission by the Continental Oil Co. to compel that governing body to discontinue application of the "composite withdrawal decline curve in the Genesco oil pool."

The Continental company maintains the decline curve as established by the commission is an arbitrary method of determining allowable withdrawals and does not reflect individual pool conditions, except perhaps in the four Arbuckle lime pools. The company asks that production be permitted on the basis of physical tests of wells. This system was in effect prior to the decline curve system adopted Oct. 1.

Companies "Prorate"

The other factor is the action of several crude oil purchasers recently with reference to taking the entire allowable from certain pools. The Stanolind Crude Oil Purchasing Co. is the only buyer which has made formal announcement. The company told operators in the Ellis county area, in September, that it could take only 80 per cent of the allowable the commission had set; then it informed operators that, in October, it could take only 65 per cent of the allowable.

The Oklahoma Corporation Commission will hold its market demand hearing Oct. 28 at Oklahoma City. One factor which lifts this hearing out of the routine class is the announcement by Chief Conservation Officer W. J. Armstrong that no operators' meeting will be held prior to the commission's hearing. In times past, except on a few occasions, the Oklahoma operators have met and thrashed out their differences with reference to nominations prior to the commission hearing which resulted in the commissioners listening only to sufficient routine testimony to support the nominations already worked out in committee meetings.

Deny Review In Case Applying Chain Tax To Station Lessor

N. P. N. News Bureau

WASHINGTON, Oct. 18.—The U. S. Supreme Court has declined to review the decision of the Fourth U. S. Circuit of Appeals which held that North Carolina's state chain store tax applies to the lessor of leased filling stations.

The case was brought before the high court by a petition filed by Shell Eastern Petroleum Products, Inc., after the circuit court had ruled the oil company was liable for some $9000 in chain store taxes assessed against its 130 leased stations in 1935.

According to Shell Eastern, in seeking a writ of certiorari in the case, the stations were leased for periods of from a year to 18 months, not subject to cancellation by Shell. The lease, it said, was an ordinary landlord-and-tenant lease which did not require the tenant to operate a filling station.

In addition to the lease, however, the parties entered into sales contracts which required the dealers to purchase only approximately 50 per cent of their requirements of gasoline, motor oils and greases from Shell Eastern, the petition said.

The circuit court's decision pointed out that during the taxable year under consideration, none of the 130 stations "made any attempt to sell the products of any oil company, and in every case continued throughout the year with the distinctive Shell colors and sold Shell products exclusively."

In another decision, the court affirmed the ruling of the Supreme Court of Missouri holding Phillips Pipe Line Co. liable for assessments under the Missouri corporation franchise tax. The company had appealed the case, contending that the blending and storage operations carried on at its Jefferson City Terminal were a part of the flow of interstate commerce and not subject to the state tax. The amount involved was $1,117.71 in taxes, assessed during 1934.

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Madison Shortens Way To Oil Executives

By WARREN C. PLATT, Editor

MADISON, Wis., Oct. 17.—While gasoline and the automobile have shortened the distance from the country to the big city, they have not by any means cut the distance from the people in the smaller towns to the few men in the big cities who run big business.

If anything the coming of the automobile and gasoline have only lengthened the distances to these big executives by increasing the demands on their time and energies. These new aids to better living are possible only by reason of big business but a penalty to that has been the isolation of its executives. This is a problem that is troubling them.

Up here in Madison nowadays it is no distance at all to a big oil company executive and they and everyone else seem to be enjoying it and making the most of it. But the distance from Madison to the big oil executive in Chicago is many, many times more than the mileage from this beautiful university city to that metropolis.

In some way the big executive must reduce this distance. The political safety of his company depends upon it. Much of the emotion against big business today has been stirred up because of the remoteness of the executives. The publication of his salary has not helped the public feeling in regard to him.

Much has been written and more spoken regarding the number of secretaries and barriers the big executive erects for his own protection. Adding to the difficulties of the executives is the lack of tact many times of these human barriers. Adding still more are the phony "big" executives who, given a stenographer and a little authority, take on all the ceremony they believe big executives command, and keep people waiting when they don't have to and are otherwise snooty to the rest of mankind.

This is not a new subject but it has been brought back fresh to my mind in some of my contacts around this town. Back in our own small home towns we can recall the distance to the big executive was millions of miles, chiefly, perhaps, because we did not know the way. These oil executives are thinking of this as they explore and enjoy the beauties of this city, a means of enjoyment many of them have not had in a score of years.

The solution to this problem is one that each man will have to work out for himself. It will have to be handled better than it has if big business wants to hold back the encroachment of political interference. Much of that interference is built on public misunderstanding, and much of that misunderstanding of what business is and just who and what a big executive is and what he does can be blamed on big business itself in not seeing mankind as clearly and as humanly as it should.

This same problem exists right in the oil industry between the small oil man and the big town oil man. In fact we are all up here in Madison largely because the oil industry's "public relations" have not been what they should be right within the industry.

But, as these oil men stretch their legs, relax and mix around this town, one can easily see that a public relations job is being done, even though it is not thought of in those terms and the oil men are enjoying doing it.

Operators Damn Engineers For Dam Flooding Project

(A letter to the editor from Consulting Pumper Ellick Botts)

To The Editor:

We have been having so much commotion around here of late that I haven't had time to keep you informed on the oil business. The excitement to which I refer has to do with flood control and navigation of the Arkansas and Verdigris rivers, with some tentative thought to fixing Bird creek so that cruisers of the second class could ply its waters.

All of which is progress of a sort, I suppose, and we should not dwell on the amount of money it is going to take, for after all, it is all paid for with bonds, etc., and the navigation earnings and so on should take care of the bonds in time so that the only losses would be through the extermination of the private securities of railroads and power companies. This would merely advance us a step farther on the road to the more abundant life by abolishing the private profit motive, which most of our leaders today tell us is wrong and has held back development of the country for 150 years.

So I can't quarrel much with this big program of improvement of our cricks and gullies and I can even go along on making the Arkansas river ready for navigation just to be prepared in case we have a major change in climate and get some water in the river. The only thing I want to do is correct a little misunderstanding that has cropped up in this business of building dams.

There was a meeting in Claremore a few days ago presided over by some government engineers and the business before the assembly was the sounding out of citizens to see whether a dam should be built at Oolagah to create a big lake. It came as something of a shock to the presiding officers when numerous oil men said that such a lake would submerge most of the Nowata oil field and destroy some thousands of wells. The matter is tabled for the moment but, unless something is done, it will come up again, for you know that an idea once planted in Washington is as hard to uproot as Johnson grass.

I think the whole affair about the Oolagah dam sprang from a widely quoted remark of our congressman, Mr. Disney. I tried to find him to get him to cipher out his utterance for me, but he was then busy touring part of his district to make sure that everybody understood that he was the one who had put the bite on the government for Twenty Million Dollars with which to build the Grand river dam, which is not to be confused with the suggested Oolagah dam.

Rep. Disney's quoted remark was that a big source of income from his Grand river lake would be sale of water to oil men of northeast Oklahoma who would buy very heavily so they could flood oil properties. He said, or

(*Continued on page* 24)

Far-Reaching Conservation Policy Vital, Ickes Tells Oil Producers

By Staff Writer

HOUSTON, Oct. 16. — Harold L. Ickes, Secretary of the Interior, administrator of oil's code during the NRA, surveyed the field of oil and gas conservation, and found much to commend, in his address before the annual dinner of the Independent Petroleum Assn. of America Oct. 16.

In his talk, which was widely broadcast he urged upon the oil industry in the future the adoption and promulgation to the public of a program of conservation which would not only cover the efficient production of oil but also its wise use. Such a program, Ickes said, was "certain to win the support of a fair-minded public and its representatives in the halls of legislation."

"The responsibility for the future of oil in our Nation rests mainly in the hands of the oil industry," Ickes concluded his talk. "With this opportunity will go credit for accomplishment or blame for neglect of opportunity."

At the start of his address Ickes recalled the only previous time he had spoken in Texas on oil. That was in Dallas, November, 1934, before the American Petroleum Institute and the echoes of that speech lingered for weeks. In his talk here he referred to chaotic conditions which existed then.

". . . I am glad to say that I am here with a much lighter heart than that which I carried on that other occasion," he said. "The burden of responsibility has, to a large measure, been shifted to other shoulders than mine. It now rests primarily with the state authorities and with the oil industry, and I say candidly and with great cheerfulness that they have carried on the job better than could have been anticipated."

The change in conditions, said the one-time oil administrator, began with the enactment of the Connally law early in 1935. That act, he described as a "catalyst", which blends other forces rather than operating as a direct force itself.

"The principal force," said Ickes," has been an unprecedented and almost unbelievable increase in the demand for petroleum products. Crude oil production has been regulated by state commissions. Refinery operations have been subjected to the effective control growing out of the fact that nearly all refineries have been operating at the practical limit of their capacities.

Operations Balanced

"Due to the support of the federal government in enforcing the prohibition against the interstate shipment of oil produced in violation of state laws, there has been no under-priced 'hot' gasoline to provoke widespread retail price wars. On account of such elements of stability to balance operations, the period since the enactment of the Connally law has had no counterpart in the history of the oil industry."

Other outstanding points in the Ickes' address were as follows:

Future Supply

"Although the search for oil has been more intensive in the U. S. than in foreign countries generally, the most favorable estimates credit the U. S. with less than half of the oil reserves of the world. We use in this country, principally from our own supply, about two-thirds of the oil consumed in the world. Simple arithmetic applied to this formula will reveal that we, in the U. S. are using up our oil reserves at a faster rate than the rest of the world. Unless this trend is checked we will be faced with an oil shortage here in advance of a corresponding shortage abroad.

"If the calculation is as simple as this, it might be assumed that the answer is correspondingly simple. Unfortunately, that is not true. The use of petroleum products usually is not prescribed or limited except by comparison with the cost of substitutes. Foreign oils should not be permitted to enter our markets without the exercise of some judgment as to quantities and qualities. It is even suggested that there might be an exercise of judgment with respect to the quantities and qualities of petroleum products that are sold for export. The production of oil should not be limited arbitrarily if there is a reasonable demand for its products which can be supplied without unduly drawing on our reserves and if it can be produced without waste.

"The present disparity in oil resources between our country and the rest of the world can be corrected to some extent. American research, engineering and management can make certain that our remaining oil reserves will be developed more efficiently and with a higher recovery factor than is common in other oil-producing countries. Supplementing this, serious consideration can be given to the quantity and character of foreign oils which might be permitted to augment our domestic supply without affecting adversely our own oil industry.

State Control

"The states and the oil industry have to their credit many accomplishments which fit the pattern of this conservation policy. Outstanding among these is the control of production in the East Texas field, which makes possible an ultimate recovery of oil from that prolific source materially greater than could be achieved by the methods employed less than a decade ago. Equally noteworthy is the manner in which the former wastage of billions of cubic feet of natural gas in the Texas Panhandle has been virtually eliminated. There are many other instances, equally worthwhile but less spectacular.

This record is worthy of praise but there is another of which little is said publicly which indicates that many things which would have been helpful have remained undone or, if done, could have been done better or sooner. I need not call the roll of these. Those of you who have seen excessive flares burning in oil fields, have watched sub-surface pressures drop sharply so that energy has been dissipated without doing useful work, who know of fictitious well-potentials, or are familiar with the practice of crediting to dead-wells oil produced in other wells in order to establish an apparent conformance with state orders, are aware of some of the items in this record.

Present Economics

From the viewpoint of the industry as a whole, crude oil production during recent months has been excessive and conditions have developed which are in conflict with a sound policy of oil conservation. Furthermore, the continued high rate of drilling indicates that the difficulties from this source will be maintained rather than diminished.

"Nearly 20,000,000 barrels of crude oil have been added to storage in recent months. This oil could have been allowed to remain in its natural reservoir underground until needed instead of being placed in surface tanks, where it is subject to the hazards of fire and flood and to the evaporation of the lighter gasoline fractions.

"This year, the oil industry exported 20,000,000 barrels more and imported 1,000,000 barrels fewer of petroleum and its products than during the corresponding period of last year. Currently, our exports of oil are nearly three times as large as our imports. A relationship of this sort does not help in establishing a parity between our oil reserves and those of the rest of the world.

"There was a consistent lowering of gasoline yields at petroleum refineries during the past summer and this deficiency apparently continues. This is not a prudent use of an essential raw material nor is it in accord with the statement of

Thompson Reelected Compact Chairman

HOUSTON, Oct. 16. — The Interstate Oil Compact Commission, in a one-day meeting here Oct. 14, reelected by acclamation Col. Ernest O. Thompson, member of the Texas Railroad Commission, to be chairman for another year. Art L. Walker, Oklahoma City, was again elected secretary and Lieut. Gov. Hiram Dow, New Mexico, re-elected vice-chairman of the compact commission.

Aside from the election there was little business before the meeting. Dr. Joseph E. Pogue, vice-president of Chase National Bank, New York, told the commission and the fair-sized audience that attended, that the U. S. faces a depression of undeterminable magnitude but that "it will, perhaps, be moderate." He said the statistical trend indicates the national business average will be not more than 10 per cent lower in 1938 than in 1937.

He said the economic outlook should influence oil producers to plan their operations for a lower figure in 1938. Gasoline consumption next year should show an increase of approximately five per cent over 1937, said Dr. Pogue but, he asserted, "we are producing and refining more crude today than consumers will demand in 1938."

an oil association that the refining industry is engaged in an untiring effort to increase the ultimate gasoline yield to the theoretical maximum. The operation of our oil refineries should be kept in step with a sound policy of conservation by obtaining from domestic sources the maximum of the lighter and more valuable petroleum products and from outside sources what we lack of the heavier and less valuable oils.

"Under present procedure for oil and gas conservation, producing states have the right to prorate production so as to prevent waste. They also have the right, under the Interstate Oil Compact, to put their heads together for the prevention of physical waste. The federal government has the right to regulate interstate commerce so as to prevent it from being used to obstruct the carrying out of state policy.

Suggested Improvements

"Five states — Kansas, Louisiana, New Mexico, Oklahoma and Texas — producing three-fourths of the national oil output, have laws for regulating production so as to prevent waste. California, which produces 18 per cent of the nation's oil, and the states of Arkansas, Illinois and Michigan, in which there has been renewed activity in oil production, have not yet enacted such laws.

"There is a variation in the respective state laws and in the orders issued thereunder. Moreover, some states are inclined to pay special attention to that class of waste which occurs when production is in excess of demand and only casual attention to the underground waste which results from the operation of wells with high gas-oil ratios and an inefficient use of the natural reservoir energy.

"Through the Interstate Oil Compact, consented to by the Congress and extended recently until Sept. 1, 1939, the six member states — Oklahoma, Texas, Kansas, New Mexico, Colorado and Illinois — agree among themselves to enact or continue laws which will prevent certain enumerated types of waste in oil production. The Interstate Oil Compact Commission was constituted in order to encourage co-operation in the exercise of their police powers in order to promote the maximum ultimate recovery from the petroleum reserves of the states, and likewise to report its findings and recommendations as to methods, practices, circumstances and conditions for bringing about conservation and the prevention of physical waste of oil and gas.

"The compact provides a mechanism for the establishment among the member states of uniform conservation practices, and could, if it would, promote vigorous competition in conservation, thereby justifying the hope of the Congressional subcommittee which encouraged the formation of the Compact and recommended its extension at the last session of the Congress.

"The federal government, through the Connally law, supports the state policy by providing that petroleum, or the products thereof, produced in excess of the amounts permitted by state statute is contraband and may not be moved in interstate commerce. In the issuance of federal tenders thereunder, the Department of the Interior follows the letter of the law. The termination date of this act recently was extended until June 30, 1939. In my opinion, and I so recommended to the Congress, it should be made permanent, as its usefulness and effectiveness have been demonstrated."

Dropping Depletion Allowance Spells Ruin for Small Concerns, Is Warning

By Staff Writer

HOUSTON, Oct. 16

A warning that the elimination of the depletion allowance for oil producing companies, under the federal tax law, as was asked by the administration at Washington, and a continuance of the present tax on undistributed profits would drive many independent producers out of business was voiced by Charles F. Roeser, president of the Independent Petroleum Assn. of America, before its annual meeting here Oct. 14-16.

"One proposal threatens the entire independent petroleum industry," said Roeser, a large-scale oil producer of Fort Worth in his address. "It might be labeled a plan to drive the independents out of the petroleum industry. This is the proposal to eliminate the present depletion allowance. Expert accountants who are intimately familiar with the financial position of large numbers of independent producers agree that, if this depletion allowance is taken away, great numbers of the independents will not be able to remain in business.

"Still other numbers of them will be disinclined to take the risks they would have to take if they remained in business. They would be disposed — and some of them have so stated— to sell out their companies to some larger corporation which was better able to distribute these inevitable risks.

"This threat to the industry is not directed solely against the very small company, although these smaller units would be eliminated almost automatically, but it is also directed against companies of considerable size whose continuance in business depends upon their finding new sources of supply with the attendant risk of dry holes.

Step Toward Monopoly

"Elimination of the depletion allowance would mean the longest step taken toward monopoly of the petroleum industry. It would also be a step taken in seven-league boots toward ultimate federal control of this industry as a public utility.

"Consult your own accountants if you doubt this; they will tell you I am putting it mildly.

"The tax on undistributed profits is another menace to the small business unit. Debts cannot be paid, new developments cannot be made, so long as this law is not amended, without incurring a taxation which is almost confiscatory.

"The Personal Holding Tax bill should be further amended to make certain that legitimate royalty companies with a small number of stockholders are not classified among those tax-evading personal holding companies which this law is intended to tax out of existence.

"These are a few of the things which lie right ahead of us. They are, perhaps, among the most vitally pressing. The import problem, the possibility of a need for new classifications in the present excise taxes on petroleum imports, the balance between supply and demand and the rest of our problems, still require our constant and unremitting attention.

The I. P. A. A. goes forward under the same officers as in the past year. All officers and department heads were reelected as a part of the proceedings of the three-day meeting here. President Roeser thus begins his third term.

Others reelected were Harold B. Fell, executive vice-president; Russell B. Brown, general counsel; T. J. Steuart, assistant to the president; N. T. Gilbert, treasurer; C. E. Buchner, executive manager; William H. Little, advertising manager and Charles Van Vleck, field manager. Messrs. Brown and Steuart have headquarters in Washington, all others except the president and the executive vice-president live in Tulsa.

With but one exception the executive committee of 12 was reelected. Joe Aylward, Wichita, Kans. producer, succeeded E. B. Shawver, also of Wichita.

Organized in 1929

The Independent Petroleum Assn. had its origin in Colorado Springs in 1929 when Wirt Franklin called together a few oil producers. Primary purpose then was to work for restriction on imports. In recent years the association has expanded its field of activity, now keeping in touch with all national questions affecting oil.

Wirt Franklin, the founder and until late 1935 the president of the association, was scheduled to speak at the meeting here on the "Relation of Imports to Domestic Production," but relinquished his place on the program to expedite the business session.

His specific proposal in this regard, additionally to the excise tax now in effect, is a limitation of the volume of imports to 4.5 per cent of the consumptive demand in the U. S., including exports. That ratio was taken from the actual figure of the last six months of 1932, back in code days, and the campaign to have it fixed into law still goes on.

In his prepared speech, copies of which were distributed, Mr. Franklin stated that lower costs of operating in foreign fields, destruction of domestic markets and uncertainties in the attempt to balance supply and demand in the U. S., were reasons for a firmer control of imports.

"The import problem is just one phase of our very closely related program for the welfare of the domestic petroleum industry," read Mr. Franklin's talk. "It is exactly as essential as the other elements of supply. Just as we accept a policy of holding domestic production within the consumptive limit, so we must insist that those who are importing petroleum products should be subject to the same limitations.

"We have a right to ask this since the importers are profit-

ing greatly from the control of domestic production. We have a further right to demand this since we have accepted the same policy for ourselves. We also believe we have a right to ask that there be written on the statute books of the nation a law setting forth a definite ratio which shall govern the amount of petroleum or its products which we admit to our markets.

"It is neither fit nor proper that an industry second in our national life should be so dependent upon the voluntary action of the importing group. In these days when there is so much discussion of a plan to economy, we must insist that any such plans shall recognize the part played by import products in determining the price and employment conditions.

"Besides this limitation to be placed upon petroleum imports there is the parallel necessity of an adequate excise tax. Our domestic production carries a heavy load of these taxes. The foreign production should bear its share of them. The only way it can do so is through a tariff or an excise tax. Until it pays its share it should not be permitted to occupy its present challenging position in our markets."

Pollution Bills Reviewed

A comprehensive review of federal attempts at legislation on stream and waterways pollution was given by J. D. Collett, Fort Worth producer and president of the Mid-Continent Oil & Gas Assn. His review embraced the bills that were before the 75th Congress. Of these, he said the Lonergan bill, Senate 13, was considered by industry generally as particularly oppressive and that the amending of the Vinson bill, H. R. 2711, made it practically as bad as the Lonergan bill. Collett said that the amended Vinson bill retains its status in conference in the next Congress.

". . . . a number of industries, a host of cities and a great majority of all of the health departments of the various states endorsed the principles of the Vinson bill . . . as it passed the House, and condemned the regulatory features of the Lonergan bill," said Collett. I think it is your job and mine to see that our Senators and Representatives are told of the views of industry at large relative to this legislation. I do not believe a majority in either House will favor the drastic regulatory form of bill if the effect of that type of measure is properly presented for their consideration."

Russell B. Brown, general counsel of the Independent Petroleum Assn., reviewed the trend of legislation of the past year, asserted that the depletion allowance question may be the most important of legislative proposals now pending. He also said the tax on undistributed profits is immediately and currently serious. "We should support those who are actively interested in so amending this provision that small corporations can pay old debts, take care of past losses and provide for business extension without the heavy tax rates which are now levied against undistributed profits used for such purposes," he said.

A high light of the meeting was the luncheon address by Jesse H. Jones, chairman of Reconstruction Finance Corp. and a long time resident of Houston. He discussed federal finances, asserted that he understood the President is now working toward a balanced budget and gave as his own opinion that business will not be so heavily taxed as to preclude fair profits.

Refinery Credit Men Plan Fall Meeting

TULSA, Oct. 18.—Shop talks on details of handling the daily work and discussions of legislation and general problems will compose the major portion of the program for the annual fall conference of the Petroleum Refiners Division of the National Assn. of Credit Men. The conference will be held at the Indianapolis Athletic Club, Indianapolis, Ind., Oct. 25, 26 and 27.

Among the subjects tentatively scheduled for discussion are:

"Credit Applications—Wholesale, Consumer and Farmer"; "Uniform Judgment Note Laws in All States"; "Credit Investigations — Consumer, Credit Cards and Farmer"; "Collection Procedure on Delinquent Accounts"; "Use and Abuse of Cash Discount"; "Accounting Procedure on Return of Barrels and Drums"; "Changes and Developments in Bankruptcy Legislation"; "Credit Cards" and "Uniform Lien Laws in All States."

The board of governors of the petroleum refiners division is composed of J. M. Judson, Chicago, Sinclair Refining Co., Chairman; E. R. Siler, St. Louis, Socony-Vacuum Oil Corp., vice chairman; H. E. Butcher, Chicago, Cities Service Oil Co.; Webb R. Charles, Wichita, Kans., Globe Oil & Refining Co.; E. W. Hesse, Bartlesville, Okla., Phillips Petroleum Co., and M. C. Roberts, Tulsa, Tide Water Oil Co.

New Equipment and New Process Developments Shown at Houston

By ARCH L. FOSTER
Technical Editor

HOUSTON, Oct. 16.—Opening in the newly erected—in fact still in process of erection—Coliseum, the Houston Oil World Exposition filled last week as the busiest period in the oil industry in Houston's oil history.

To those acquainted with oil expositions elsewhere, the towering derricks, clanking pumps, and the roar of gas, gasoline and diesel engine-powered drilling equipment were strangely and pleasantly familiar.

To the exhibitors it was a chance to discuss individually and in detail the solution of the myriad problems of producers and refiners the country over, but especially in an area in reach of thousands who can but seldom attend such shows in other parts of the oil world.

Outstanding at this exposition, the unmistakable signs of a more concentrated and individual interest in equipment, processes and methods and how they can be applied to specific problems. Refining equipment and process companies had a larger percentage of the indoor space than in other shows. The refining technologist, engineer or executive could find easily all the prominent representatives in each major and many minor lines of plant equipment.

Direct and easy comparison of control instruments as supplied by the nation's leading makers; pumps and prime movers for every conceivable purpose, with a goodly number of innovations to give the refiner cause for thought and planning on revamping operating methods; voluminous data on steels new and old for all purposes; corrosion-preventing and cleaning methods and products, and the thousand other items which go to make up a modern refinery were displayed, to form what amounted to a short course in what is new in refining.

Refining Program

In addition to the displays of refining equipment, a four-day program of engineering and chemical papers on refining problems practically covered the major subjects in which the refiner must be interested. Conferences on refining processes, measurement and control, laboratory methods and procedures were held, at which were presented some 25 papers by well-known technologists and engineers in these fields.

Notable in these meetings was the fact that not too many papers were given in any one period, plenty of time for discussion was available, and the avidity with which the audiences took advantage of the opportunities attests to the fact that papers without discussion detract from the usefulness of such meetings.

Mention should be made also of the work of W. H. Curtin Co., of Houston, which printed at its own expense the programs for the refinery sessions, and whose staff took charge of and handled the meetings throughout the week; this company also has undertaken to supply those interested with copies of the papers presented.

Field Equipment

Among the new features of field equipment are the ultra-heavy, four-wheel drive oil field trucks and the "Marsh Buggy" type of specialized automotive prime mover equipment; portable drilling rigs on trucks which show higher efficiencies. One ambitious company pounded away during the week drilling a hole in the exposition grounds with such a portable rig, always with a crowd of onlookers.

The technical and engineering colleges of Texas and Louisiana were well represented with displays and with large numbers of students examining the processes and equipment shown. The American Society of Mechanical Engineers held a well-attended series of meetings the first of the week, discussing especially directional drilling methods.

An interesting personal note of the Houston Expo was the presentation to John R. Suman, vice president of Humble Oil & Refining Co., and president of the Expo, of a large silver platter, for his efforts to make the Exposition outstanding. It is understood that additional space for the next exposition is planned, facilitating the admission of more exhibitors and the handling of the crowds visiting the show.

Cocanowers Improving

TULSA, Oct. 18.—R. G. Cocanower, manager of the Waggoner Refining Co., Vernon, Texas, and Mrs. Cocanower, are reported to be recovering satisfactorily from serious injuries received in an automobile accident. The accident occurred near Vernon, and Mr. and Mrs. Cocanower are confined in the hospital there.

N.O.M.A. Seeks New Laws To Protect Independents

(*Continued from page* 9)

federal regulation of production.

The subject of divorcement of marketing from other divisions of the industry came before the convention with the banquet address by Congressman Biermann. Hearings on the Biermann bill may start in January, he said.

Jobbers were urged by the Congressman to support the bill by writing their senators and representatives and giving their experience in marketing.

Precedent Established

Precedent has been established for divorcement, said Congressman Biermann. Cited were the meat packers' consent decree, the Hepburn act separating coal mining and railroad ownership, and a recent North Dakota law prohibiting motion picture producers from operating theaters.

The Madison oil case was referred to three times in the proceedings of the National Oil Marketers convention. Jobbers crowded bulletin boards in the NATIONAL PETROLEUM NEWS and *Platt's Oilgram* booths to read latest reports from the court room being received by direct teletype connection from NATIONAL PETROLEUM NEWS editorial bureau in Madison. News was flashed to the convention a few minutes after it was made in Madison.

Carl O. Beroth, Chicago, Acme Petroleum Co., referred to the trial in an address the first day welcoming jobbers to Chicago, relating that he had been proud to say he was a member of the association when he was on the witness stand.

Another reference was in a resolution by the association commending the attorney-general and anti-trust division staff for their "conscientious performance of duty." Paul E. Hadlick, secretary of the association also referred to the Madison case in his report.

12 Resolutions Passed

Twelve resolutions were adopted by the convention during the members' meeting Oct. 14. They are, in brief:

1—That the attorney-general be urged "to continue his investigation of the major oil refiners on the East and West coasts and elsewhere and to impanel grand juries if the facts justify such action."

The situation of East coast jobbers was given as "most precarious at this time due to agreements between refiners believed to be in violation of the anti-trust laws."

This resolution also commended the attorney-general and anti-trust staff for their "conscientious performance of duty."

2—That Congress be urged to pass the divorcement bills, to prevent the major oil companies from spending profits from other divisions on marketing and to protect independent oil marketers.

3—That Congress be petitioned to repeal the undistributed profits tax.

4—That the present temperature correction practice used in figuring volume of gasoline be condemned and the association secretary call attention of proper persons and agencies to this condition.

New Base Rates

5—That the Interstate Commerce Commission give early consideration to the so-called "6.6 complaints", and that the ICC make a thorough study of weights and base charges for various oil products on actual weight.

6—That Congress repeal the Connally "hot" oil act.

7—That Congress withdraw approval of the Interstate Oil Compact.

8—That Congress forbid the Interior Department from issuing monthly forecasts of crude and motor fuel demand through refusing to pass appropriations for these forecasts.

9—That Congress pass a measure "that will not permit exports of petroleum at any time to exceed imports," and giving a suggested bill.

10—That Congress pass the bill of Congressman Daly, Pennsylvania, to repeal the petroleum import duty.

11—That Congress pass the pipeline divorcement bill.

Refer To Oil Code

12—That the Federal Trade Commission be notified that the association will not participate in any attempt to obtain an oil marketing code until, in the opinion of the board, "the position of the independent oil marketer can be adequately protected by such a code."

This resolution further set out a belief "that a proper and legal code should be supported wholeheartedly, provided it safeguards the interests of all divisions of the oil industry."

A dapper, dynamic oil jobber, fluent on the convention floor or as a chairman, was elected president of the National Oil Marketers Assn. He is Roy R. Fisher, Detroit, Argo Oil Corp.

Fisher had been vice-president and succeeds M. B. Whiting, Clifton Forge, Va., who had been head of the organization for two years.

Wm. Earle White, Petersburg, Va., Delta Oil Co., was elected vice-president at the board meeting. Paul E. Hadlick was re-elected secretary and treasurer.

Two New Directors

Of the 16 directors, 14 were re-elected. New directors are J. C. Sampson, Bloomington, Ill., Sampson Oil Co., and W. J. Kunz, Minneapolis, Kunz Oil Co.

Re-elected directors, in addition to Fisher and Whiting, the address indicating the state represented, are:

C. E. Bauer, Louisville, Continental Oil Co.

Fred E. Bergfors, Quincy, Mass., Quincy Oil Co.

R. E. Breed, 3rd, Baltimore, General Refining Co.

R. J. Coughlin, Minot, N. D., Westland Oil Co.

J. E. Fenn, Miami, Fla., Orange State Oil Co.

G. D. Finnigan, Cedar Rapids, Iowa, Super Service Oil Co.

Frederick D. Koehler, Jr., Elm Park, Staten Island, N. Y., F. D. Koehler Co.

W. R. McCain, Springfield, Mo., Purity Oil Co.

Clarence Schock, Mt. Joy, Pa., Schock Independent Oil Co.

E. M. Thompson, Goldsboro, N. C., Thompson-Wooten Oil Co.

Frank R. Thompson, Anderson, S. C., Anderson Petroleum Co.

Walter H. Wingrove, Sheboygan, Wis., Wingrove Oil Co.

The new president extolled the retiring president and Hadlick and pledged himself to continue the organization's program "so successfully followed in the past two years."

Now Recognized

"Our association is now the recognized representative of that group (independent jobbers) and I want to say that in Washington and elsewhere it is now recognized and understood that there is such a group in the oil industry and that this group is important and willing to fight if need be for a just and proper consideration of their problems.

"It is my hope that, during the coming year, we may bring to fulfillment a large number of the projects on which we are now engaged," said Fisher.

"It is hoped that the lesson learned at Madison will put a stop to pool buying of gasoline and other products and agreements on jobber margins in order that we may have a free and open market to purchase our supplies," said Hadlick in the secretary's report Oct. 14.

The Department of Justice was given full credit in the case and its staff attorneys were characterized as "able, conscientious and honest."

Anti-Trust Law Revision

Hadlick then spoke for strengthening anti-trust laws as court decisions have upset Congress' original intent and it is necessary "for Congress to express itself again in more impressive language."

"Look for yourselves at the domination exercised by such major oil companies as Standard of Indiana, Atlantic Refining and Socony-Vacuum in the territories in which they are the largest operators," the report continued.

"They are sacrificing the independent oil jobber on the altar of their own greed. How long must we wait for our anti-trust laws to be amended so that a company occupying the position of market leader and using that leadership to crush the independents out of business is made amenable to the law.

"Our laws must be amended to protect the independent business man from the unfair tactics of the integrated operator."

Independents Raided

The report then reviewed the association's opposition to the Connally act and charged that major oil companies were raiding independents.

"Look back and note that the major oil companies' raids on the independent producers with 10-cent oil were mainly for the purpose of buying up those producing properties at bankrupt prices and not because there ever was any economic need for 10-cent oil.

"In 1932 and 1933 the major oil companies gave the independent producers the worst licking of their lives and then threw them a piece of meat in the form of dollar crude oil. In late 1933 and 1934 the independent refiner was caught in the millstones of dollar crude and 2-cent gasoline and since that time it has been the jobbers turn," the secretary reported.

"A servile class can be nothing but servants to others. We independents must free ourselves from bondage; maybe a Moses will appear as of old," the report continued.

"The independent does not relish warfare. He wants peace and the prosperity that accom-

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Fewer Fuel Oil Grades Needed, Burner Engineer Tells N.O.M.A.

By Staff Writer

CHICAGO, Oct. 18.—Indications that an organized effort is being made to reduce and standardize the number of domestic fuel oils now available was revealed at the convention of the National Oil Marketers Assn. here Oct. 13, by Milton A. Powers, chief engineer, Timken Silent Automatic Division, Timken-Detroit Axle Co., Detroit.

Powers, who is chairman of the Technical Committee E on Burner Fuel Oils of Committee-D-2, American Society for Testing Materials, spoke of the work of that committee and its proposed objective to simplify the domestic fuel oil grades into fewer numbers. His subject was "Fitting Fuel Oil Specifications To Burner Performance".

"Generally speaking," said Powers, "we may view with some degree of satisfaction the progress made in domestic oil specifications. As recently as five years ago, one large refiner was supplying from a single plant, 21 distinct and separate grades of fuel oil, not one of which was made to close specifications.

"Today finds but three numbered grades—reasonably specified—for automatic domestic service. Yet we are more than willing to concede that we are but part way along the road to maximum satisfaction for all concerned."

Powers compared the present confusing story which oil burner salesmen tell their prospects on the "mechanical merits of various burners, what oils they will handle, relative heat values, what they cost, and so on," with the story of the simplified availability of stoker coal and the "single fuel" advantage of gas.

Handicap To Sales

"The sooner oil and burner salesmen realize the harm they are causing by childish bickering on the pros and cons of various oils, nonsensical trade names concocted for conventional burner parts, and the elaborate theories of burner combustion," Powers commented, "the sooner our prospects will be willing to accept oil as a fuel rather than be driven by the force of our confused logic to gas or coal."

Powers also emphasized the distinct movement to a lighter oil for use in automatic controlled mechanical burners of every type, and ventured the opinion that it would cost no more to make a single grade of oil to No. 2 requirements than it does to make both No. 2 and No. 3 requirements.

NOMA Papers

Two addresses before the National Oil Marketers Assn. convention are published in this issue of NATIONAL PETROLEUM NEWS.

Congressman Biermann's banquet address on the Biermann bill is on page 45.

The paper on "Conservation, Production Control, Proration, Taxation and Competition", by Clarence Schock, chairman, Independent Petroleum Jobbers Assn. of Pennsylvania, is on page 38.

Powers' comments on the general indifference, until recent years, of the oil industry toward the domestic fuel oil market, were also emphasized by Leod D. Becker, publisher of Fuel Oil Journal, who criticized the major oil companies who are selling oil burners for their general inability to sell the burners at a profit. The recent boost in fuel oil prices along the eastern seaboard, just at the start of the heating oil season, was also criticized by Becker as being "typical" of the major oil companies' marketing ability.

"The major oil companies have been perpetrated to greed since the beginning of the oil industry," Becker said.

A more detailed review of Mr. Powers' paper will appear in a later issue of NATIONAL PETROLEUM NEWS.

N.O.M.A. Seeks New Laws

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panies peace. But a prelude to peace is establishing your right to do business as freemen, unfettered from the direction and machinations of the major oil companies.

"We can live at peace with the major oil companies and our neighbors if we are free men, but never if we are in bondage."

Legislation Discussed

The report then discussed the Interior Department monthly forecasts, tariff, interstate compact, and the Biermann divorcement bill.

"Your secretary believes this proposed legislation to be sound and the real answer to the problems confronting the oil marketer," the report read on divorcement.

"Let me express a wish that the major oil companies will have the guts to appear before the Congressional committee that hears the Biermann bill and present their side of the case, and not do as they did on the Connally bill and other oil control legislation last year which they favored.

"They stuck so-called independents out in front, and behind the scenes, in the lobbies and offices, helped to pass it.

Opposition Forthcoming

"The majors have already prepared some of the so-called independent groups to oppose the passage of the Biermann bill and I fully expect that the opposition before the committe will come, not from the major companies but from those who have dragged the name of the independent in the mud trying to bask in the sunlight of the majors.

"Such independency isn't worthy of the name. Washington had his Benedict Arnold and we have ours. May the true independent marketers come to the front in Washington this next winter in such overwhelming numbers that the Biermann bill will become a law in a very short time."

Refinery Managers Changed

ST. LOUIS, Oct. 18.—Changes in refinery superintendents at Shell Petroleum Corp.'s plants have been announced at headquarters here.

R. H. Washer, superintendent of the Roxana, Ill., plant will become superintendent of the Houston, Texas, plant on Dec. 15. Stanley Clulow, now at the East Chicago plant, will succeed Washer at Roxana. Frank Cutting of the Rocana plant will be transferred to East Chicago to succeed Clulow as superintendent.

D. A. Cocoran Dies

TULSA, Oct. 18.—D. A. Cocoran, well known in Mid-Continent refining circles, died recently at his home in Oklahoma City. He had suffered from heart disease for some time.

Cocoran for a number of years was an official of the Wirt Franklin Refining Co. at Ardmore, Okla. When the Oklahoma City field was discovered he built the first refinery at Oklahoma City—the Black Gold Refining Co. He was head of that company for several years.

Indiana Jobbers Announce Topics

INDIANAPOLIS, Oct. 18.—Convention of the Indiana Independent Petroleum Assn. Oct. 27 and 28 at the Severin Hotel, Indianapolis, promises to be the largest fall gathering of this group ever held. Seventy new members have been added to the association's roster during the past several months.

Brownie Carslake, Akron, of the Firestone Tire & Rubber Co. will be the lead-off speaker the first day.

"Where are we Drifting," is the subject of a talk by F. Harold Van Orman, president of Van Orman hotels, and vice-president of the American Hotel Assn.

H. A. Hollopeter, Indianapolis, attorney connected with the Indiana Chamber of Commerce, will discuss the complaint of the association filed with the Interstate Commerce Commission asking for an adjustment of the present 6.6 pounds per gallon weight basis now used in computing freight charges on gasoline shipments.

A closed session for jobbers is scheduled for the morning of the second day, at which H. C. Harrington, local attorney, will discuss legislative matters with jobbers.

R. D. Marshall, Bloomington, Ill., of Williams Oil-O-Matic Heating Corp. will use "Don't Be A Foolish Virgin" as his subject Oct. 28.

Grease Institute Elects Officers

N. P. N. News Bureau

CLEVELAND, Oct. 18.—The National Lubricating Grease Institute has elected George W. Miller, American Lubricants, Inc., Buffalo, its president for the coming year. Retiring president was H. F. Wilhelm, Socony-Vacuum Oil Corp., New York. The new vice president is M. R. Bower, Standard Oil Co. of Ohio, Cleveland. Secretary-treasurer E. V. Moncrieff retains his office as does executive-secretary D. S. Hunter.

The board of directors was re-elected and increased to 12 members by the addition of J. R. Corbett, Cato Oil & Grease Co., Oklahoma City.

The Institute plans to continue temporarily at least the promotional campaign begun last year with some expansion. The board of directors will make a study of promotional advertising in the next few months, on which a report will be made at the first meeting in 1938.

Kettering Talks At Institute's Annual Meeting

N. P. N. News Bureau

NEW YORK, Oct. 18. — Charles F. Kettering, vice-president and director of research for General Motors Corp., will be the headline speaker at the 18th annual meeting of the American Petroleum Institute, Nov. 8-12, at the Stevens hotel, Chicago. His address, the subject for which has not yet been announced, will be given the afternoon of Nov. 11.

Another speaker from outside the oil industry at the general sessions of the convention, will be Congressman Wesley H. Disney, from Oklahoma, author of the bill bearing his name to double oil import duties and restrict oil imports. He also speaks the afternoon of Nov. 11.

The third outside speaker will be Dr. H. E. Howe, editor of Industrial and Engineering Chemistry, who will talk the afternoon of Nov. 10 on, "The Significance of Petroleum Research—Its Value to the Public, its Necessity to the Industry."

Axtell J. Byles, president of the institute, will deliver his annual address at the Nov. 10th general session. J. D. Collett, of the producing firm of O'Keefe and Collett, Fort Worth, will also speak at this session, his subject being not yet announced. George A. Hill, Jr., Houston Oil Co., Houston, will speak at the Nov. 11th general session. His topic is not yet announced.

60 Committee Meetings

There will be two general sessions, seven group sessions, three each on production and refining and one on truck transportation; and over 60 committee meetings, as a part of the institute's annual meeting.

The production group sessions will be on drilling practice, production practice, and production practice and research. The refining division will have a session on iso-octane, on motor fuels, and one on miscellaneous topics. The transportation session will be on truck tanks.

Expiring at this meeting will be the terms of nine officers of the institute, 51 directors, and 75 members of divisional general committees. Its board of councillors will meet Nov. 10, to nominate candidates for election to the board. Election will take place the same day, in the afternoon. The annual dinner is scheduled for the evening of Nov. 11 and entertainment is being arranged. The preliminary program follows:

General Sessions
Nov. 10, 2:30 p.m.

Axtell J. Byles, president, American Petroleum Institute, New York.
J. D. Collett, O'Keefe and Collett, Fort Worth.
"The Significance of Petroleum Research—Its Value to the Public, Its Necessity to the Industry", by Dr. H. E. Howe, Industrial and Engineering Chemistry, Washington.

Nov. 11, 2:30 p.m.

George A. Hill, Jr., Houston Oil Co. of Texas, Houston.
Wesley E. Disney, Member of Congress, Washington.
Charles F. Kettering, General Motors Corp., Detroit.

Group Sessions
Division of Production
Drilling Practice: Nov. 11, 9:30 a.m.

Presiding: B. B. Wescott, Gulf Research and Development Co., Pittsburgh.
Following papers under consideration, speakers to be announced: Well-Depth Measurements, Circumferential Welding of Casing, General Discussion of Relation Between Design and Heat Treatment, Comparison of Electricity and Steam for Drilling Oil Wells.

Nov. 12, 9:30 a.m.

Production Practice:
Presiding: W. E. Gilbert, Shell Oil Co., Los Angeles.
Topics: *Factors Controlling the Bridging of Sand on Slot Openings, Gas-Oil Ratio Control, Gas-Engine Maintenance.*

2:00 p.m.

Production Practice and Research:
Presiding: H. H. Power, The University of Texas, Austin, Tex.
Following papers now under consideration, speakers to be announced later: *Emulsion Prevention, Productivity and Well-Performance Terminology, Significant Aspects of Research Program Under API Research Project 4, Dealing with Origin and Environment of Source Sediments of Petroleum.*

Division of Refining

Nov. 11, 10 a.m.

Miscellaneous Topics:
Presiding: K. G. Mackenzie, The Texas Co., New York.
"Fuel Oil Production and Use—Present Status and Future Outlook of Supply of Domestic and Industrial Fuel Oils in the U. S.", R. T. Goodwin, Shell Union Oil Corp., New York.
"Influence of Fuel Characteristics on High-Speed Diesel Performance", G. A. Hope and W. S. Mount, Socony-Vacuum Oil Co., Inc., New York.
"A Decade of Research on the Chemical Constitution of Petroleum", Frederick D. Rossini, National Bureau of Standards, Washington, D. C.

Nov. 12, 10 a.m.

Isooctane:
Presiding: J. B. Rather, Socony-Vacuum Oil Co., Inc., New York.
"Motor Fuels from Polymerization", Gustav Egloff, J. C. Morrell, and E. F. Nelson, Universal Oil Products Co., Chicago.
"The Catalytic Polymerization of Butylenes by Sulfuric Acid", E. H. McAllister, Shell Development Co., San Francisco.
"Aircraft Operation with Fuels of 100-Octane Number and Higher", S. D. Heron, Ethyl Gasoline Corp., Chicago.
Report of Division's Nominating Committee.
F. E. Rice, Phillips Petroleum Co., Bartlesville, Okla., Chairman.

2 p.m.

Motor Fuels:
Presiding: T. G. Delbridge, The Atlantic Refining Co., Philadelphia.
CFR Reports Covering Road Knock Tests and Laboratory Knock-Test Procedure.
"Fuel Systems of 1937 Automobiles", T. W. Legatski and R. R. Couch, Phillips Petroleum Co., Tulsa, Okla.
"Effect of Altitude on Anti-knock Requirements of Cars", Neil MacCoull, K. L. Hollister, and R. C. Crone, The Texas Co., New York.

Automotive Transportation

Nov. 10, 8 p.m.

Truck Tanks:
Presiding: Leo Huff, Pure Oil Co., Chicago.
"The Advertising Value of Style in a Truck Tank". (Speaker to be announced)
"Truck Tank Manufacturers' Problems in Designing and Building Delivery Equipment for the Petroleum Industry". (Speaker to be announced)
"Problems in Operating Truck Tanks", J. W. Sinclair, Union Oil Co. of California, Los Angeles.

I. C. C. Waits Oil Industry's Study Of 6.6 Estimate

N. P. N. News Bureau

WASHINGTON, Oct. 18. — The Interstate Commerce Commission does not intend to hold any hearings before late November or early December on the several complaints now before it attacking the 6.6 pounds per gallon weight estimate used by railroads in arriving at charges for shipment of gasoline and other petroleum products.

Earlier this year it had been indicated that the hearing in the case of Tankar Gas Inc., Minneapolis, filed early in February before any of the other cases, might be held during the summer or early fall.

Plans to defer hearings in any of the cases until late November or December were made known in a letter written by the ICC section of dockets to Stanley B. Houck, Minneapolis, attorney for Tankar, who had written the commission suggesting that assignment of the cases for hearing be held up until all members of the petroleum industry had had an opportunity to determine their attitude in the matter of the weight estimate.

Consolidate Complaints

It was also indicated that the several complaints would be consolidated for hearing, since they all involve essentially the same general issues—the complaint by certain portions of the oil industry that the 6.6-pound weight estimate upon which they pay charges is substantially in excess of the actual weight-per-gallon of the products transported.

Tankar originally asked that the hearing be held in Minneapolis, but, since the filing of the first complaint, intervenors from all parts of the country have entered it and subsequent cases have been filed, so it is not known where the hearings or hearings may be held.

More Intervenors

Meanwhile, a number of new intervention petitions in the 6.6 cases have been granted by ICC within the past two weeks, to add to the several hundred already on file. None of the recent intervenors has filed what is known as an "affirmative" intervention—one adopting the allegations of the complainants—but several have asked the "same relief and remedy" as the complainants, if the Interstate Commerce Commission should find the charges based on the estimated weight are unlawful, as alleged.

Among those asking the same relief and remedy are L. L. Coryell & Son, Inc., Lincoln, Nebr., who have been granted leave to intervene in the Tankar case. Many of the other intervenors in this same case have taken this stand.

Other new intervenors all filed petitions in the case brought by Anderson-Prichard Oil Corp. and associated companies. This complaint, besides challenging the weight estimate, also attacks the "dome loading" regulations of certain railroads as discriminatory to shippers, particularly those shipping from the southwest. The contention is that loading temperatures in this area are usually much higher than at points where the cars are unloaded, with the result that the shippers pay for property not actually transported due to shrinkage. Dome loading, it is contended, would eliminate some of this loss from shrinkage.

Late intervenors in this case include 49 oil companies in Minnesota, Iowa, Missouri, South Dakota, Nebraska, Illinois and Wisconsin, whose petition also seeks the "same relief and remedy" as the complainants; and Gulf Oil Corp., Gulf Refining Co., Spur Distributing Co., Nashville, Tenn., and Shell Petroleum Corp., all of whom declare interest in the case, but give no indication of how they stand on the proposed lowering of the weight estimate.

Sales Manager Dies

NEW YORK, Oct. 18.—John C. Wolke, 45, general sales manager of L. Sonneborn Sons, Inc., for the past six years, died here today. He was employed by the Standard Oil Co. (New Jersey) for 25 years and at the time of his resigning to join Sonneborn was vice president of Stanco, Inc., the specialty marketing organization of the Jersey Standard.

Missouri Jobbers Meet

JEFFERSON CITY, Oct. 18. —The Missouri Independent Oil Jobbers Assn. is meeting Oct. 20 and 21 at Lake Ozark. Besides the business meetings there will be a cruise and a banquet, Robert W. Hadlick, secretary, announces.

Jacobi Takes Stand P. M. Session Oct. 18

(*Continued from page* 13)

Maurice F. Hanning, attorney for the Platt defendants, that the price quotations in the Journal dated Monday were really Saturday's prices, while the Monday *Oilgram* carried Monday's price quotations.

Charts Withdrawn

Judge Stone remarked that it seemed the chart was a little out of line and suggested that the witness prepare a new one. Chaffetz then withdrew several of the charts submitted as exhibits.

During presentation of the charts, Hanning objected on behalf of *Platt's Oilgram* to a chart purporting to show the trend of *Oilgram's* East Texas market. He said that the only way *Oilgram* and NATIONAL PETROLEUM NEWS tied into the case at all was the fact that the major companies used the *Oilgram's* Oklahoma market price in the contracts——"if they had not done that, we would not be in it at all." So, Hanning argued, evidence against his defendants should be limited to *Oilgram's* Oklahoma market.

Chaffetz contended that raising of the spot market in East Texas had the effect of raising the Oklahoma price.

Judge Stone overruled the objection.

Late in the afternoon of Oct. 18, the government called to the stand Wm. Paul Jacobi, tank car buyer for Socony-Vacuum. He was the first major company employe called as a witness.

After routine questions about the Socony-Vacuum setup, Lewin, government attorney examining Jacobi, asked him if the price trend in January and February, 1935, was not "irregular and fluctuating".

Grand Jury Testimony

Jacobi's reply that he didn't recall, prompted Lewin to question the Socony-Vacuum buyer about his appearance before the Madison grand juries in 1936 to "refresh his memory".

Judge Stone overruled Donovan's objection, stating "It is very clear to the court that government counsel may refresh the witness' recollection and he doesn't have to show the witness his grand jury testimony."

Next, Lewin tried to put in copies of weekly market letters which Jacobi identified as having written in February, 1935, to A. G. Maguire, Wadhams (Socony-Vacuum) official and one of the defendants.

Objections filled the air as oil company attorneys jumped up in various parts of the courtroom to protest. Finally, Judge Stone advised Lewin to defer reading the letters until later.

Asked About Meeting

"Now, Mr. Jacobi," Lewin went on, "state whether you were invited by H. T. Ashton, a defendant here, to come to a meeting in St. Louis, March 5, 1935."

"I was," replied Jacobi, as a hush fell on the courtroom and everyone strained forward in their chairs to listen. When he got off the train, Jacobi testified, he went direct to Ashton's office.

"Now, will you tell us whether you saw Robert W. McDowell there?"

"Yes, sir."

"Who is Robert W. McDowell?"

"He is vice-president in charge of sales of the Mid-Continent Petroleum Corp., Tulsa."

"A defendant in this case?"

"Yes."

"Is he in court?" Lewin asked, and the judge repeated the question. McDowell stood up.

"Is that the same gentleman?"

"Yes, sir."

"Among Those Present"

By a series of similar questions, Lewin had Jacobi list the following as also being present at the meeting in Ashton's office: O. J. Tuttle, of Empire Oil & Refining Co. (Cities Service); H. T. Ashton, manager of the Lubrite division of Socony-Vacuum; I. A. O'Shaughnessy, president of Globe Oil & Refining Co.; P. E. Lakin, sales manager of Shell Petroleum Corp.; Edward Karstedt, formerly vice-president of Continental Oil Co.; Clyde M. Boggs (Kanotex), president of the Western Petroleum Refiners Assn.; Mr. Cocanower, then of Olney Oil & Refining Co.; Rex Winget, Cushing Refining & Gasoline Co.; and Mr. Simmons, president of Rock Island Refining Co.

Later on Jacobi added the name of A. M. Hughes, sales manager of Phillips Petroleum Co.

Of those mentioned, the questioning brought out, Cocanower, Winget, and Simmons were not named defendants in the indictment, while Karstedt, a defendant, is not being tried at this time.

Prolonged argument developed among counsel as Lewin started questioning Jacobi about what occurred at this meeting he had testified about. But Judge Stone overruled objections and directed the witness to go ahead and tell it in his own way.

"When I went into Ashton's office," Jacobi testified, "I greeted the men there, and then went out for an hour or so. When I came back the men were seated around a table and a discussion was going on. I sat down.

"Mr. Ashton or Mr. McDowell, one or the other, had a piece of paper in front before them, and one or both of them mentioned that this piece of paper was supplied by Mr. Bourque . . . " .

Bourque Stands Up

At this point Lewin identified A. V. Bourque as a defendant and secretary of the W. P. R. A. Bourque stood up, then Jacobi resumed.

"There were a number of names of small refiners listed on this piece of paper, and opposite each name was set a figure, purporting to show the number of cars of distress gasoline that these various refiners would have available for sale in March, 1935.

"There were various representatives of the larger companies, whom I understood were members of a tank car stabilization committee appointed by Mr. Arnott . . ."

Lewin objected. "This is just what happens when you give the witness the chance to bring something in that hasn't been called for," he told the court.

"We don't care who these men were, except what office they held with these corporations," Judge Stone declared, ordering that part of the witness' answer striken out.

Asked About Buying

Lewin asked Jacobi "what was discussed there about the major companies buying this gasoline that was on that paper?"

"These men" Jacobi replied, "were trying to figure out whether they could buy this gasoline that appeared on Mr. Bourque's survey."

Jacobi went on to relate that representatives of smaller refiners present—Cocanower, Winget, Boggs and Simmons—were "greatly interested" in the conversation.

"They told us," Jacobi added, "that they were in——"

"Now, I don't want that," Lewin interjected.

"—in difficulty, due to unfavorable conditions in the refining industry," Jacobi said, finishing his sentence.

"As the meeting progressed I was asked," the Socony-Vacuum buyer continued, "if I could take the gasoline set after Champlin Refining Company's name, and I told them I thought I could, and stated that I would have to check with Champlin as to quality and price."

Jacobi said there were other companies mentioned—Sinclair, Barnsdall, Pure Oil, Skelly and Deep Rock.

"I believe Mr. Ashton indicated that he would contact these companies to see whether it would be possible for them to take any of this distress gasoline appearing on this list."

Jacobi was starting to tell about another meeting which he said was held in St. Louis the same day when Judge Stone called a recess until the morning of Oct. 19.

Jacobi had been on the stand only a few minutes the morning of Oct. 19 when Lewin told the court the witness' answers were a "distinct surprise and in direct contradiction to his testimony before the grand jury."

The witness had testified that the purpose of the "plan" discussed at the St. Louis meeting was to take surplus gasoline off the hands of independent refiners—to get some co-ordination of purchasing.

Judge Stone gave permission for Lewin to read Jacobi's grand jury testimony.

Donovan objected that the transcript had not been authenticated, had not been read over by the witness and that defense counsel should be permitted to see if the same questions were being asked; but he was overruled by Judge Stone who added sharply, "I have heard that request before and ruled on it."

There was more questioning of Jacobi with the witness admitting that an "imprint" result of taking distress gasoline off the market would be the raising of the tank car price.

Lewin then read what purported to be questions and answers from the grand jury transcript. When he had finished, Judge Stone remarked that he saw nothing inconsistent in Jacobi's prior testimony and what he had just stated on the witness stand.

Jacobi, under Lewin's questioning, then described a meeting at the Coronado hotel, in St. Louis the afternoon of March 5, 1935, which, he said, was attended by all those present at the morning meeting in Ashton's office, except the small refiners.

The Socony-Vacuum buyer said he was asked by Ashton to serve on a sub-committee of the "Tank Car Stabilization Committee", along with O. J. Tuttle, of Empire, and Robert W. McDowell, of Mid-Continent.

"Did the plan contemplate buying surplus gasoline which otherwise might be sold at distress prices," Lewin asked

Depict Buying 'Plan' in Oct. 19 Sessions

Jacobi and the answer was yes.

Judge Stone ruled out a question as to whether the major companies represented at the St. Louis meeting definitely committed themselves to take specific amounts. However, questioning as to specific companies was allowed.

Jacobi said he understood Shell Petroleum Co. was to take any "distress" gasoline that Cushing Refining & Gasoline Co., had and that Tuttle (Empire) was to contact Mr. Cocanower, of Olney, for its "distress" gasoline.

"As for myself, as I testified yesterday," Jacobi added, "I had done business for years with Champlin and found them a reputable company. My people told me that they needed some gasoline, so I took 40 cars in March."

Other companies were to be contacted, he added.

Lewin tried to pin the witness down to a statement that the major companies had approved the "plan" and committed themselves to taking specific amounts of distress gasoline from the small refiners. The witness said he "got the impression" that everyone at the St. Louis meeting had approved the plan and that those present were to check specifications of the small refiners and, if the product met requirements, they would issue purchase orders to take what they could.

The comprehensive survey by Bourque showed 600 to 800 cars of distress gasoline on the hands of small refiners in Oklahoma, North Texas and Kansas during March. Jacobi said that as far as he knew, all this gasoline was taken up.

Donovan objected. Lewin came back with, "If he doesn't know, I don't know who would."

There was more wrangling among counsel and Judge Stone remarked "This witness wants to tell the facts, if you will just let him."

Donovan Silenced

Donovan objected again and Judge Stone told him, "Sit down, I will ask the question."

"I have an objection to state- - -"

"Objection overruled - - - - now what companies were buying," the judge asked Jacobi.

"But your honor, it doesn't appear yet that the witness knows," Donovan replied.

"For your information, Mr. Donovan," Judge Stone replied sharply, "I am trying to find out if he knows. Sit down. I will do it the way I see fit."

The judge then pointed out to Jacobi that he had been in close contact with the buying companies and asked what companies had bought in March.

"Socony-Vacuum, and Wadhams, of course," the witness replied. "I feel sure that Empire did, I am reasonably sure about Phillips — same applies to Mid-Continent, Continental and Globe. But I am not sure about the others, I think they came in later."

Jacobi then described how the sub-committee of three returned to Tulsa and kept in contact with small refiners and major companies buying. He admitted that "in my enthusiasm I may have urged them to buy."

A moment later, Judge Stone told Lewin, as the government attorney tried to draw out more detail about Socony-Vacuum's buying, "Mr. Lewin, you have a perfect right to examine the witness, but do it in a proper manner."

"I am trying to, your honor," Lewin replied.

Questioned About "Plan"

Lewin then questioned Jacobi about conversations the witness, or McDowell or Tuttle supposedly had with other companies about the "plan" to buy surplus gasoline. Government counsel tried to show that some companies not represented at the St. Louis meeting, were "well posted on the plan" when contacted in the next few days.

Jacobi said that he had asked some independent refiners to buy; he mentioned Kanotex and Anderson-Prichard, but neither of these bought any cars, he added.

Replying to Judge Stone's question as to "what companies bought under the plan", Jacobi listed the following: Socony-Vacuum, Wadhams, Sinclair, Shell, Standard of Indiana, Empire, Pure, Phillips, Mid-Continent, Skelly, Barnsdall and Globe.

"There may have been others," Jacobi added. "Deep Rock didn't buy any."

Incidentally, it was learned today that, during a recess discussion between counsel yesterday, Government Attorney Chaffetz indicated that the government would consider dismissing the case against Deep Rock Oil Corp., on the showing that it was in receivership during the period covered in the indictment.

The noon recess for Oct. 19 was called as Jacobi was about to tell about other "meetings".

Approximately the same men who attended the St. Louis meeting at the Coronado hotel or their representatives, Jacobi said on resuming the stand the afternoon of Oct. 19, attended other meetings of tank car buyers.

Meetings Listed

Besides the St. Louis meeting, Jacobi listed time and place of other meetings as follows: March 1935, St. Louis, Coronado hotel; April 5, 1935, Excelsior Springs, Mo.; May 6, 1935, Blackstone hotel, Chicago; early in June, early in July, early in August, early in September 1935, all at the Western Petroleum Refiners Assn. office in Tulsa; early in October, 1935, Blackstone hotel, Chicago; Nov. 5, 1935, Ashton's office in St. Louis; Dec. 4, 1935, Blackstone hotel, Chicago; Dec. 27, 1935 and Jan. 28, 1936, both at W. P. R. A. office in Tulsa; and Feb. 27, 1936, Blackstone hotel, Chicago.

There were only a few at the February 27, 1936 meeting . . . Jacobi, Ashton and Bourque, as he recalled, the witness testified.

Asked when he had stopped buying, Jacobi replied, "When I appeared before the grand jury in May, 1936."

Then, Lewin turned his questioning to the Chicago Journal of Commerce and Platt's Oilgram, defendants, and asked if there was any discussion regarding the trade journals at a meeting of the McDowell-Tuttle-Jacobi subcommittee on March 14, 1935.

Trade Journals Come In

"The discussion," Jacobi replied, "was brought about first by reports that some hard-boiled buyers for the major companies were trying to buy distress gasoline under the going price or what was a fair price. We felt that, if the practice were continued, it would have a detrimental effect. It would defeat the purpose of the buying plan, which was to buy at a fair price, if the trade journals heard about it. Small refiners would be discouraged. Other buyers would hold off buying and prices would go lower."

Lewin then asked: "Did you get a suggestion from a particular major company as to how these trade journals would operate in getting these prices?"

The witness made several attempts at answering this question as it was repeated in several forms. But none was satisfactory to the government attorney.

Jacobi said it was suggested that the major companies pay the "fair market price", instead of distress prices, because the prices paid by the major companies "would indicate to the journals the market trend even though they didn't report such prices."

Jacobi admitted that he had only recently learned that the trade journals report prices to jobbers only.

Lewin declared the answer was "not responsive and evasive."

Says Witness "Evasive"

"Was it your understanding in 1935 that, if the prices paid by the major companies were reported to the trade journals, the trade journals would raise their price quotations to correspond with them," Lewin asked of Jacobi.

"We felt," Jacobi answered, "That the prices paid by the major companies would certainly have an effect on the trade journals, if they were reported to the trade journals in many, many instances."

Replying to a question by Judge Stone, Jacobi said that the trade journals had never sat in on any of the meetings of tank car buyers.

Jacobi said the *Oilgram* called him every day and that he gave "Mr. Steiger (Tulsa Oilgram office) the price I had paid that day." He said that he had talked with Keith Fanshier, petroleum editor of the Chicago Journal of Commerce, only two or three times in his life.

Under questioning by Lewin, Jacobi testified that, between March and June, 1935, he and McDowell and Tuttle met and "arrived at what we thought was a fair market price for the following week."

He said that he then called Tracey, of Sinclair, Chamberlain of Pure, O'Shaughnessy of Globe, and Lakin of Shell and advised them of this price.

Hammering at the witness, Lewin elicited the answer that he, Jacobi, suggested to the men he telephoned that they pay the same price he as a Socony-Vacuum tank car buyer was paying.

Jacobi said he made no "price recommendations," after June 1, 1935, except in January, 1936.

Compares Price Trend

Lewin then asked Jacobi to compare the trend of prices he paid with price quotations shown on a chart purporting to be made from *Oilgram* prices. Jacobi testified the price trend was the same.

Lewin then asked for a recess until Oct. 20, when he said he will begin a new line of questioning.

Union Disputes Close 25 Leases

N. P. N. News Bureau

LOS ANGELES, Oct. 16.—Improved earnings by Union Oil Co. of California for the first three quarters of 1937 were attributed by L. P. St. Clair, president, to stable and better prices for products, greater crude oil production and increased sales volume, although payroll as well as material costs showed substantial increases over those for 1936.

This report was made to stockholders Oct. 15, when the directors approved a cash dividend of 30 cents, regular, plus an extra 25 cents. This will bring dividends paid during 1937 to $1.40 per share as compared with $1 for the comparable 1936 period.

The company showed a net profit of $8,850,000 for the nine months after all charges, including depreciation, depletion and allowance for normal federal income taxes, but before provision for surtax on undistributed profits which is not expected to be required. This is the largest net profit since 1929, and is more than double the $4,400,000 realized during the same period last year.

Third quarter earnings were also the largest for a like period since the 1929 quarter, aggregating $3,650,000 or 78 cents per share, as compared with $3,000,000 and 64 cents for the second quarter of 1937 and $2,400,000 and 55 cents for the corresponding period last year.

Ray Shaw In Hospital

CHICAGO, Oct. 18. — Raymond Shaw, president of Chek-Chart Corp., entered Columbus Memorial Hospital Oct. 8 for an appendectomy, and is now well on the road to recovery.

Standard Posts Prices For Wilmington Crude

N. P. N. News Bureau

LOS ANGELES, Oct. 16.—Effective Oct. 15, Standard Oil Co. of California announced its schedules of prices to be offered for crude oil in the Wilmington and El Segundo fields—scenes of active townlot development in the Los Angeles Basin.

Prices at the well in Wilmington, under this schedule, will range from $0.75 a barrel for oils of 14 to 16.9 gravity, to $1.21 for 30 gravity and above.

The El Segundo offerings start at 80 cents for 14 to 18.9 gravity and fall in line with Wilmington prices for crude of 19 gravity and above to a top of $1.21 for 30 or better gravity. Full details of these schedules are shown in the crude price table in this issue.

As previously announced, Standard will start construction Oct. 18 on a four-mile pipe line from Wilmington to connect with its trunk line to the El Segundo refinery. This work will be completed in from two to four weeks.

In the meantime, the company is taking tank truck deliveries at its Hynes station from those Wilmington producers with which it has already negotiated contracts. The producer pays for transportation on such deliveries.

Purchases of crude by Standard at Wilmington have greatly helped a situation where oil sold as low as 35 cents a barrel.

DAILY AVERAGE PRODUCTION IMPORTANT DISTRICTS
American Petroleum Inst. Figures

	Week Ended Oct. 16 Barrels	Oct. 9 Barrels
Oklahoma City	144,750	150,600
Total Okla....	595,450	586,050
East Texas...	481,500	480,400
Total Texas..	1,460,800	1,454,300
Rodessa	44,000	46,150
Total La.....	246,850	247,950
California	699,000	698,700
E. of Rockies.	2,903,150	2,880,350
Total U. S....	3,602,150	3,579,050
Crude imports	100,570	61,710
Tot. new sup'ly	3,702,720	3,640,760

Gas, Fuel Stocks Up 713,000 Barrels Last Week, A. P. I. Reports

N. P. N. News Bureau

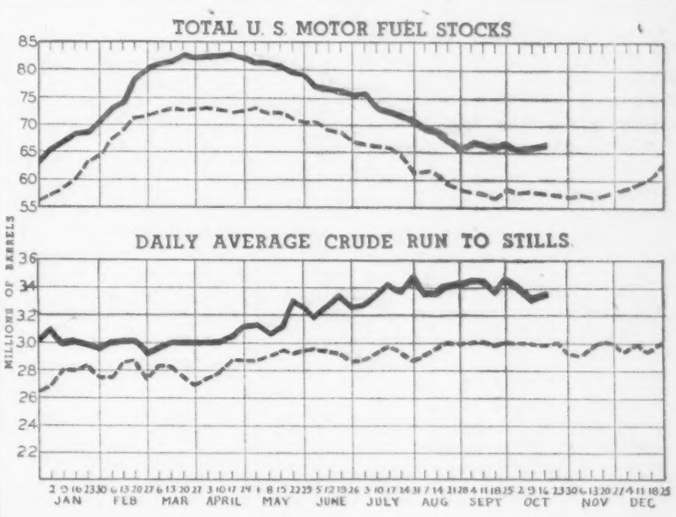
NEW YORK, Oct. 19. — Increases in refinery crude runs, motor fuel stocks and gas and fuel oil stocks were reported during the week ended Oct. 16, according to the American Petroleum Institute.

Crude runs were up 28,000 barrels on daily average, to 3,072,000 barrels. Increases of 33,000 barrels in Texas Gulf plants and 16,000 barrels in Indiana-Illinois-Kentucky, against the one sizable decrease of 28,000 barrels in East Coast plants, brought the increase for the country.

Motor fuel stocks, which recorded the first increase of the season the week ended Oct. 9, increased another 218,000 barrels the past week. The largest increase was 142,000 barrels in Oklahoma - Kansas - Missouri. Other gains were around 50,000 barrels or less. Three small decreases in stocks were reported, these being in Indiana-Illinois-Kentucky, Texas Gulf and North Louisiana-Arkansas.

Gas and fuel oil stocks piled up 713,000 barrels the past week, following an increase of 1,366,000 barrels the previous week. The largest increase was in the Texas Gulf, where stocks gained 423,000 barrels.

Changes in motor fuel stocks by location were; at refineries, increase of 640,000 barrels, to 33,102,000 barrels on Oct. 16; in-transit and at terminals, decrease of 275,000 barrels, to 22,376,000 barrels; and stocks of unfinished gasoline, decline of 147,000 barrels, to 6,722,000 barrels.



CURRENT REFINERY OPERATIONS

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended Oct. 16	Oct. 9	Per Cent of Reporting Capacity Operated Week Ended Oct. 16	Oct. 9	Stocks Thousands of Barrels Total Finished and Unfinished Motor Fuel* Oct. 16	Oct. 9	Total Finished Gas & Fuel Oil Oct. 16	Oct. 9	Cracked Gasoline Production Gas & Fuel Oil % Total Capacity Reporting	Daily Av. Production (Barrels) Week Ended Oct. 16	Oct. 9
East Coast	100.0	530,000	558,000	79.2	83.4	18,216	18,177	15,599	15,725	100.0	119,000	117,000
Appalachian	88.4	106,000	102,000	82.2	79.1	2,647	2,589	917	930	94.6	25,000	24,000
Ind., Ill., Ky.	92.4	461,000	445,000	94.3	91.0	10,014	10,065	7,398	7,310	98.5	158,000	158,000
Okla., Kans., Mo.	84.7	298,000	307,000	77.8	80.2	6,002	5,860	3,891	3,866	90.3	76,000	76,000
Inland Texas	56.6	144,000	148,000	71.6	73.6	1,852	1,805	1,954	1,813	71.7	39,000	42,000
Texas Gulf	95.7	735,000	702,000	92.2	88.1	8,157	8,190	11,128	10,705	98.0	171,000	154,000
La. Gulf	96.6	140,000	133,000	83.3	79.2	1,743	1,723	3,441	3,384	100.0	26,000	18,000
No. La., Ark.	63.7	49,000	45,000	84.5	77.6	401	427	436	409	77.5	7,000	7,000
Rocky Mt.	69.7	52,000	47,000	83.9	75.8	1,289	1,273	722	734	85.4	16,000	15,000
California	90.9	557,000	557,000	74.7	74.7	11,879	11,873	70,319	70,216	98.0	77,000	81,000
Total Reporting	89.4	3,072,000	3,044,000	83.0	82.2	62,200	61,982	115,805	115,092	94.8	714,000	692,000
Estimated U. S. Total (Bur. of Mines Basis)		3,380,000	3,350,000			65,760	65,532	119,155	118,442		790,000	770,000

*Includes stocks at refineries, in bulk terminals, pipe lines and in transit.

Oil Well Truckers May Secure 'Territory' Permits from ICC

N. P. N. News Bureau

WASHINGTON, Oct. 18.—Whether the operations of oil field equipment haulers should be limited to those points they actually served before June 1, 1935, "grandfather date" under the Motor Carrier Act, or shall be allowed to be carried on anywhere within the "territory" wherein they operated previous to that date is expected to be finally determined by the Interstate Commerce Commission soon.

Several ICC examiners and joint boards, after holding hearings on applications of truckers of oil well supplies, have recommended that operations be limited to actual points served prior to the grandfather date. These recommendations have met with sharp protest from the truckers themselves, who cite the uncertainty of the oil production industry; the fact that new fields may open up where there has been no previous production, and that they will be barred from such new fields until after getting a certificate from ICC for new operations.

The truckers said their operations should cover all points within a state or group of states, as they had held themselves out for such service before the grandfather date, even though they may not have served all points.

Reversal of Form

But last week an ICC examiner who held hearings on the application of L. C. Jones, Oklahoma City, for a certificate covering operations in Oklahoma, Kansas, Texas, Louisiana, New Mexico, Colorado, and Wyoming, over irregular routes, "by reason of having been engaged in such operation on June 1, 1935," recommended to the commission that the certificate be granted, and in arriving at his proposed report brought out most of the contentions of the truckers who have been seeking to have the commission reverse previously issued reports and orders.

If the commission upholds Examiner P. S. Peyser's proposed report in the Jones case, then operations of oilfield truckers will be limited by the lines of states or "territories" in which they operated prior to grandfather date, rather than by the actual points to which they had hauled.

Peyser pointed out that Jones' operations before the grandfather date, in general, had been in an endeavor to serve those points where a need had developed for the drilling of new oil wells, regardless of whether he had served the particular point before.

Union City Transfer, Beaumont, Texas, produced this same sort of argument before the ICC here in September, after it had protested against the proposed report of a joint board which would have restricted its operations to those fields it had served prior to grandfather date.

Dr. Whitmore Honored

CHICAGO, Oct. 16.—A joint dinner meeting of the Petroleum Division and the Chicago Section, American Chemical Society, will be held at the Stevens Hotel Oct. 22. Dean Frank C. Whitmore, of Pennsylvania State College, and president-elect of the society, will be the main speaker, on the subject, "Hydrocarbons." An informal reception will be held for Dr. Whitmore in the rooms of the Chicago Chemists Club, at the hotel preceding the dinner.

Operators Damn Engineers

(*Continued from page* 14)

the papers said he said, that the oil men would buy $8,000,000 worth of water each year.

Now, I have figured that at the prevailing city water rates in this region of an average of about 3000 gallons for one dollar, Eight Million Dollars would buy about 480,000,000 barrels of water each year or 1,300,000 barrels daily. That, you must admit, is a right smart amount of water, especially when you consider that up to now the oil operators have been able to get plenty of water close to home.

It must be that Rep. Disney's calculations were overheard or read by somebody in Washington who has a passion for efficiency. Not being familiar with floods except the kind that hit towns along the Ohio river, this character, who we call Mr. X, said to himself, as follows:

"If the oil men want their properties flooded and are willing to pay $8,000,000 per year for the job, we can build a dam for much less and do the job all at one time and besides create a lot of new wealth such as riparian rights, fishing and canoeing and supply new work for the federal mosquito control division."

"This project must be," said Mr. X, sotto voce, "something like the technique of Mr. Wallace who killed the pigs and cows. I have heard that oil men are bothered by overproduction and this probably is the way they have decided to end it. Such a thing must not be left to private handling, so we will just take hold and flood 'em good and proper."

So, that's the way I figure the Oolagah project came about, and if the oil operators don't watch it closely they are sure to be treated to some of the finest flooding imaginable and it will not be the Bradford variety.

Yours truly,
Ellick Botts,
Consulting Pumper.

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Confusion on Octane Rating Methods

By ARCH L. FOSTER, Technical Editor

IN SPITE of the huge amount of discussion which has attended the work, study, and deliberations of the technologist group which finally resulted in the development of the so-called L-3 method for determining anti-knock rating of motor fuels, trends at present in the use of that method seem destined to cause confusion in the minds of a large percentage of the petroleum industry, especially the refining and in greater measure the marketing branches of the industry.

This newest method, it is generally recognized, grew out of a condition wherein some refining-marketing companies appeared to have the edge on others in the matter of anti-knock quality of fuels sold by the former companies. So-called leaded or "Q" gasoline was limited, by contract with Ethyl Gasoline Corp., to a maximum of 70 octane number, determined by the tentative standard A. S. T. M. method of test known as the Motor Method. This standard method was developed from road and laboratory test data obtained by the Detonation Subcommittee of the C. F. R. in 1934, and surperseded the older so-called Research method, which had reached the point of failure to properly correlate laboratory test values with road performance.

Under the Motor Method, some refiners found or believed they found that their products did not show equally good road performance in comparison with competitive fuels, which may or may not have compared in laboratory octane rating satisfactorily. A few companies did not and do not use lead, and therefore were not bound by contract to maintain the status quo of 70 octane number maximum to which lead users were held. After a complicated and expensive research program Ethyl Gasoline Corp. developed, and offered to its licensees in October, 1936, an alternative method for determining octane ratings, raising the maximum numerical value under this new method to 73; this presumably to clarify the situation for such refiners as might wish to take advantage of the new method.

Considerable opposition to this proposed method from many refiners resulted in the investigation of existing gasolines and proposed methods, with the ultimate result that the L-3 method was worked out and went into effect in September, 1937.

Recently a large group of refiners saw fit to adopt specifications for gasolines sold by the group, based on the L-3 method. The chief reason for this action, it seems, is that, confronted with two methods on which refinery operations are based, these refiners were not willing to install two test engines to carry out these two tests on their production, a matter which would have involved considerable additional expense.

However, the tendency seems to be growing, among marketers and non-technical men, to lose sight of the fact that the L-3 method is an *alternative* method for use by licensees in dealings with the Ethyl Gasoline Corp. As we understand it, licensees may still use the Motor method with a top of 70, or may choose the L-3 with 72 maximum octane number, for "Q" gasoline. The L-3 method is *not* a standard, and is an official method only between the Ethyl organization and its licensees. The Motor Method is the only one which is standard, and will remain so until changed by the A. S. T. M. The L-3 is not an official reference method and should not be confused as such.

The general use of two different test methods will ultimately result in confusion in the whole field of gasoline anti-knock rating, most technologists to whom we have talked agree. Either one or the other should have the center of the stage, and be accepted as *the* method; otherwise octane ratings cease to have a definite meaning, and the tendency will be to discredit octane ratings as indefinite and ambiguous. The plans of the C. F. R. Committee or of the A. S. T. M. are not known but those groups probably are not idle. A conviction is growing among many refining men that the situation may be clarified with advantage to all concerned.

Refining Technology

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Confusion on Octane Rating Methods R-241

Corrosion Rates of 10,000 Still Tubes Guide Selection of Steels..by M. G. VanVoorhis..R-242

An organized collection of still tube corrosion rates obtained by routine measurements of tube walls determines the quality of steel required for any desired length of tube life.

Cracking Three Different Charge Stocks in Combination Selective Cracking Unit....by E. R. Smoley, A. H. Shutte, W. Ullrich, and H. M. Curtis..R-250

Detailed results of cracking three charge stocks—Van Zandt crude, East Texas crude, and mixed Gulf Coast crudes—in a 14,000-barrel combination unit. A careful presentation of operating details, temperatures, pressures, yields and properties of charges and products, when making different products from these crudes.

"State of the Art" as Seen in the World's Current Technical Literature.....R-262

Dearth of Proven Test Methods Worries Grease Manufacturers.....R-266

National Lubricating Grease Institute hears discussions of grease problems, particularly the lack of specifications, and their relation to supplying suitable lubricants to users.

New Grease Tester is Shown Grease Manufacturers R-269

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Corrosion Rates Of 10,000 Still Tubes Guide Selection of Steels

By M. G. VAN VOORHIS
N. P. N. Staff Writer

Abstract

● A systematic tabulation and marshaling of routine calibrations of still tubes is made to produce economies in refining costs and valuable information on relative service life of steels used for still tubes. Such a system is described along with comparative service data of some of the alloy steels. The system was developed in the general engineering department of Gulf Oil Corp. It was outlined by F. C. Braun, metallurgical and corrosion engineer, in an interview by the writer.

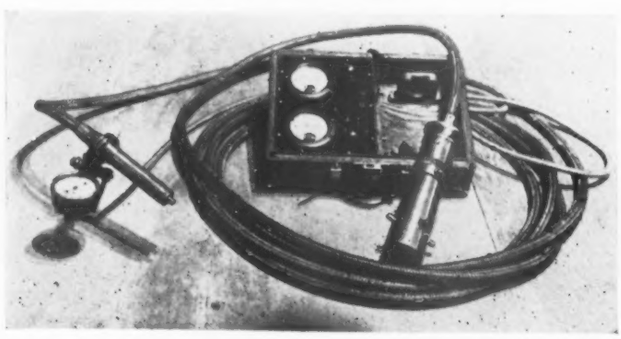
LIFE histories of 10,000 cracking still tubes do much to minimize guessing about what a tube may be expected to do under any given set of conditions. Possibly 10,000 is too small a figure but whatever it is the facts disclosed by their records are received with respect by refinery engineers and steel metallurgists alike. The data represent experience which points away from past error.

The system of record keeping and how this mass of data is made to reveal its information is an interesting development of Gulf Refining Co.'s engineering department. Essentially it is a record of tube wall dimensions made during the active lives of the tubes. More specifically, it consists of calipered dimensions of the inside diameters of the tubes. While corrosion at the ends of tubes generally is most severe, calibrations are also taken from time to time throughout the entire length of the tube, in order to check on corrosion rates at various points. Where corrosion is found not to be uniform throughout tube length, steps are taken to compensate for this variation. This will be discussed farther on in this article.

Physically, the tube replacement record consists of 16 x 24 inch sheets with loose leaf binding. The record for all stills is about two inches thick. Tube measurements made on scheduled shutdown periods are received from all refineries on similar sized sheets which are kept in large folders—one for each still.

The tube numbering system for each still is visualized in the tube replacement record book by including diagrams, such as the one shown in Fig. 1, of the end views of the tubes in the still. Numbering of tubes is in the order in which oil passes through them. The chart includes also a table of tube sizes.

Each tube replacement record sheet (not shown) contains spaces or lines for 72 tubes. Four main columns are provided for each tube number so that the life records of four different tubes may be recorded for that position if need be while the majority of the tubes may last through the one or more changes of individual tubes.



A new instrument for calibrating still tubes throughout their whole length of 30 or 40 feet in a minute to a minute and a half. Measurements are translated electrically into meter readings calibrated in inches

Each main column is subdivided into columns for noting tube numbers, material of which the tube is made, diameter calibrations at top and bottom with date, number of hours run, date of replacement, and comments. Page references are made to location of the still and to the chart from which the numbering is taken.

The manufacturing department forms, a portion of which is shown in Fig. 3, contain spaces enough for all the tubes in a still. Every tube is calipered at three points on each end and the largest diameters found at each point are recorded on the sheets along with tube material, hours of service, and any necessary remarks. The sheets are mailed into the engineering division office to be filed with other similar test records. Any tube changes that may have been necessary are noted separately on the bottom of the manufacturing department form in a table provided for this purpose. This data are transcribed to the foresaid tube replacement record before filing.

The tabulated data show all that it is necessary to know about the tubes if sufficient time is taken to hunt it out, but the picture is more easily seen graphically. Gulf's engineering department does this by plotting wall loss in inches per 1000 hours (interpreted also in estimated life of tubes in hours) against tube numbers.

On the corrosion curves shown in Fig. 2, it is apparent that the corrosion rate was very much greater in the

● One of the principal reasons for lag in acceptance of new and improved steels in refining operations is the impracticability of making conclusive tests, particularly where operations are on a relatively small scale. Being forced to depend partially upon the claims of steel manufacturers, who are bound to put their best foot forward, refiners see the need of restraint, but to an unknown degree. The method of handling the routine still tube calibrations, however, is applicable to the operation of a single still as well as to multiple units and will evaluate various steels.

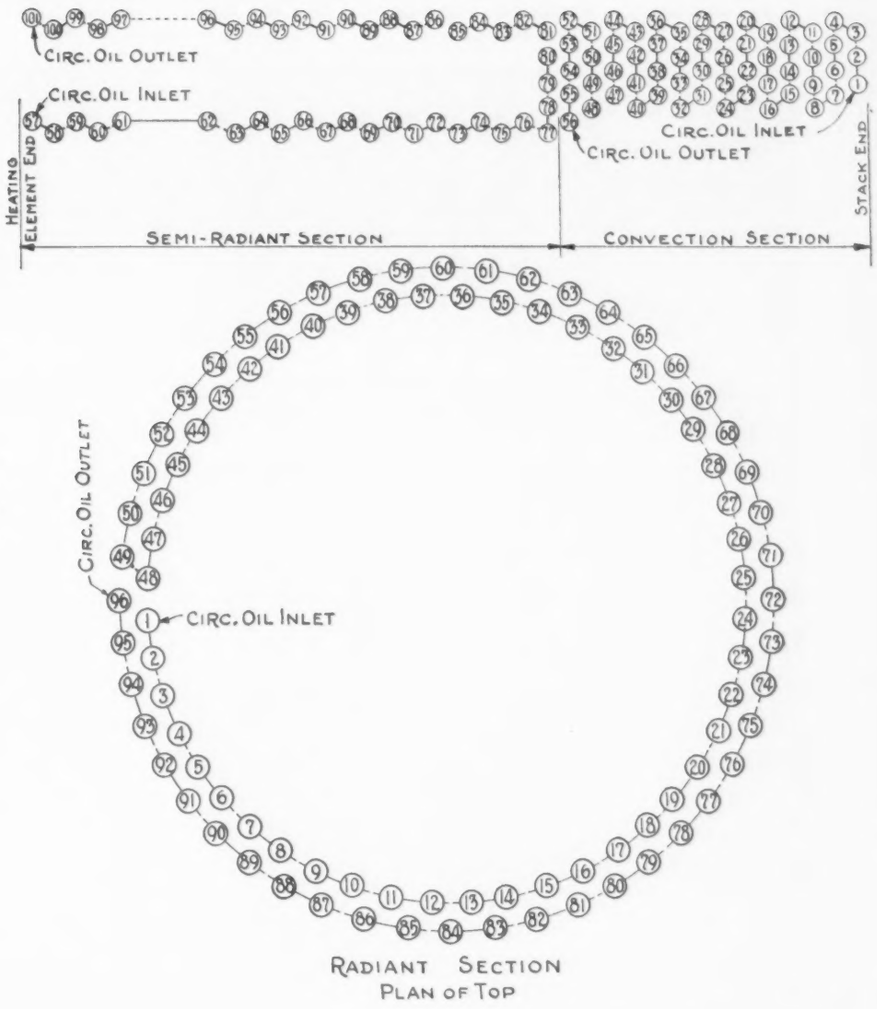


Fig. 1—Diagrammatic layout of the heating elements of a still with numbering system. The radiant section tubes are vertical while the semi-radiant and convection sections are horizontal. Tube sizes are given in the accompanying table

end of the convection section adjoining the semi-radiant section and at the oil outlet end of the semi-radiant section. This plot corresponds with the diagram of the still shown in Fig. 1.

It will be noted in Fig. 2 that the estimated life of tubes of the same material varies widely even though the tubes may be side by side. In using the curves the average life is assumed. There are numerous reasons for some tubes having shorter than average life; such as slight differences in the analysis, particularly the chromium content, in different heats, slight variation in the heat treatment, etc. Eccentric tubes in which the wall is thinner on one side than the other have very materially shorter lives than those with uniform wall thickness throughout since the allowable thickness of metal to be removed by corrosion is reduced. These eccentricities are allowable under specifications governing the manufacture of these tubes.

A horizontal line might be drawn at any level on the chart to fix a satisfactory economic life. If 20,000 hours (3 years approximately) were selected, the chart indicates that tubes numbered from 48 to 55 inclusive should have been a better material than carbon steel to have the desired life of 20,000 hours for this service. In the semi-radiant section tubes numbered from about 87 to 101 should have been of a better material than the 2% chromium alloy steel with ½% molybdenum. The chart shows the results obtained with this installation and indicates how nearly correct was the designer's estimate of the materials required.

This particular still is used for a crude whose corrosion characteristics are moderately severe. In the convection section the short-life tubes will eventually be replaced by 2% chromium ½% molybdenum steel tubes. In the semiradiant section the short-life tubes will be replaced by 4-6% chrome steel. In the radiant section

TUBE TABULATION

Tube Numbers (incl.)	Tube Sizes O. D.	Tube Sizes I. D.	Length	Section of Heater
1	4¾″	3⅝″	35′ 1½″	Radiant
2–22	4¾″	3⅞″	25′ 0″	Radiant
23	4¾″	3½″	25′ 0″	Radiant
24–25	4¾″	3⅞″	25′ 0″	Radiant
26	4¾″	3½″	25′ 0″	Radiant
27	4¾″	3⅞″	25′ 0″	Radiant
28	4¾″	3½″	25′ 0″	Radiant
29–32	4¾″	3⅞″	25′ 0″	Radiant
33–34	4¾″	3⅝″	25′ 0″	Radiant
35	4¾″	3⅞″	25′ 0″	Radiant
36–76	4¾″	3½″	25′ 0″	Radiant
77–95	4¾″	3⅝″	25′ 0″	Radiant
96	4¾″	3⅜″	27′ 3¼″	Radiant
1	4¾″	....	20′ 0″	Convection
2–55	4¾″	....	17′ 3″	Convection
56	4¾″	....	20′ 0″	Convection
57	4¾″	3¾″	20′ 0″	Semi-radiant
58–100	4¾″	3¾″	17′ 3″	Semi-radiant
101	4¾″	3¾″	20′ 0″	Semi-radiant

it will be noted that the 4-6% chrome and 2% chrome steels proved to be entirely satisfactory for the service required. The average estimated life all the way through appears to be over 40,000 hours.

Chromium Provides Stamina

The chromium content of still tubes is generally considered to be the principal measure of corrosion resistance. Up to comparatively recently 4-6% chrome was the most commonly used analysis. Now lower chrome steels are gaining prominence with possibly the 2% chrome being the most generally used. The cost of 2% chrome alloy is roughly double that of carbon steel tubes as compared to 4-6% chrome steel which costs three times as much as carbon steel tubes. If 4-6% chrome steel tubes at three times the cost will give nine times the life of carbon steel tubes which are good for 10,000 to 12,000 hours, it is evident that on a basis of 20,000-hour economic life,

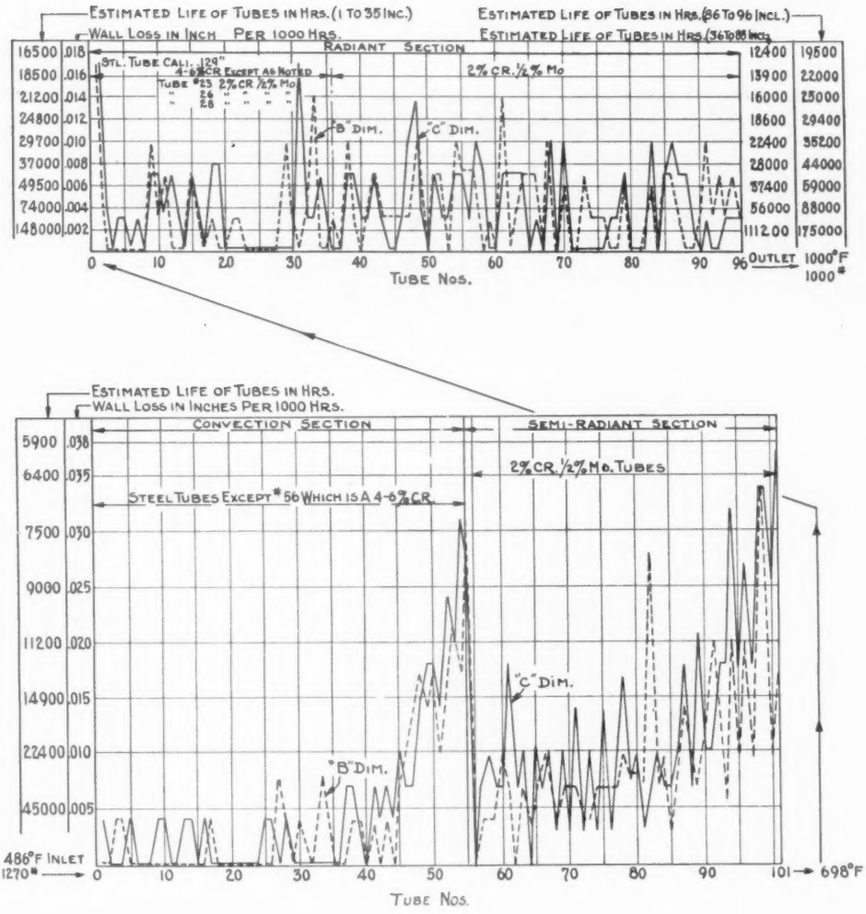


Fig. 2—Corrosion study and tube selection is simplified by plotting corrosion rates in tubes throughout a still side by side and interpreting these rates in terms of estimated tube life in hours. In the convection and semi-radiant sections there are indications that more corrosion resistance is needed at one end of each

4-6% chrome steel is not entirely satisfactory from an economic standpoint.

Two per cent chrome steel at double the cost and possibly four times the life is a better bet. As mentioned above, chromium is used chiefly to combat the corrosion problem and as such is the principal index of corrosion rate and time of usefulness. The addition of molybdenum improves high temperature strength properties which are believed to be directly related to creep strength, tends to eliminate temper-embrittlement, and improves workability.

In the jump from 4-6% chrome, ½% molybdenum to 8-10% chrome, 1½% molybdenum steel the cost more than doubles again with other corrosion resisting properties improved, roughly, fourfold. To provide an intermediate step in this range, recent tests have been made with chrome-molybdenum-aluminum-silicon steel. In this alloy the addition of aluminum and the high silicon content further increases the resistance to oil corrosion at 15% increase in cost over straight 4-6% chrome molybdenum steel. The tube life of such a steel is sufficiently longer to warrant the 15% increase in cost. In addition, this steel has improved oxidation resistance, and the aluminum addition gives it non-hardening qualities.

For tubes of 5 inches outside diameter and ½-wall the price indexes of alloy steels on the basis of unity for carbon steel tubes has been estimated as follows:

	Price Index
Carbon steel	1
2% chromium, ½% molybdenum	2.1
5% chromium, ½% molybdenum	3.1
Same + aluminum and silicon	3.1 +15%
9% chromium, 1½% molybdenum	7.4
12% chromium, 3% tungsten	10.5

At present tests are being made on a 2% chrome steel with aluminum and silicon to provide an intermediate step between 2% and 4-6% chrome steels. Several of the steel mills are producing these steels but Timken has been outstanding in the development. The value of these inter-

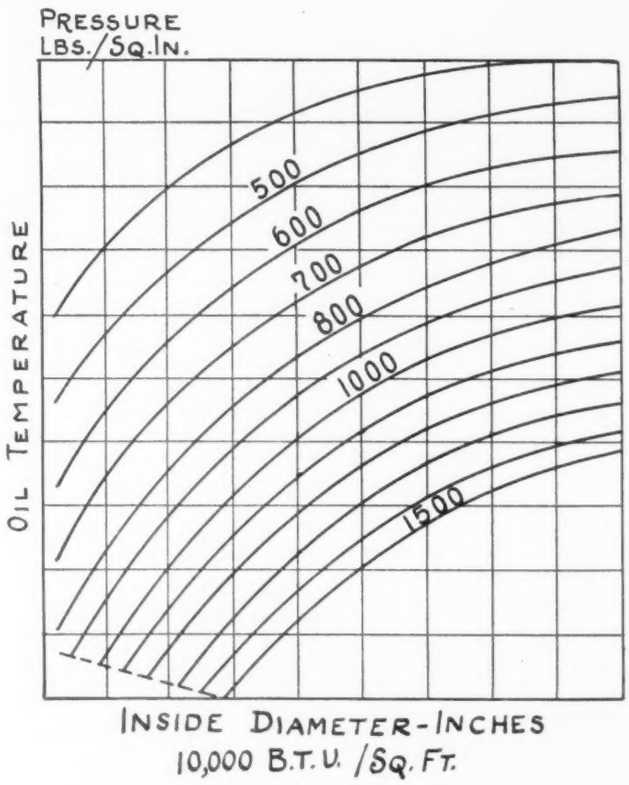
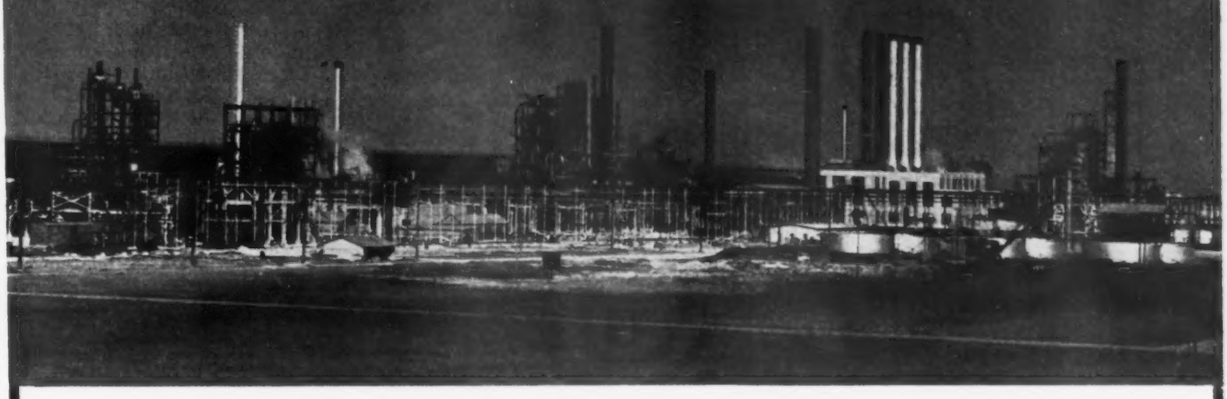


Fig. 4—The allowable wall thickness of a still tube varies with amount of coking, rate of heat input, and conditions of pressure and temperature. When these conditions of operation are varied, numerous charts of this type tell the new allowable inside diameters

Repeat orders mean more than satisfactory performance



When a refiner orders additional cracking units several times from the same organization it proves beyond question that the design, construction and operating efficiency of the equipment was satisfactory in every way.

It does even more than that—it proves that the design was economically sound—that it helped the refiner to balance his output to meet marketing conditions—to get a larger volume of *profitable* business.

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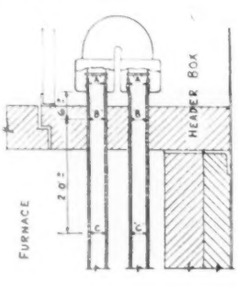
FOR LOCATION OF CALIBRATION POINTS "A, B & C" SEE SKETCH BELOW.

TUBE NO.	MAT'L	TOP INS. DIA. CALIBRATIONS A	B	C	HOURS IN SERVICE	BOTTOM INS. DIA. CALIBRATIONS A	B	C	REMARKS
1	STL.	3-47	3-41	3-40	3116	3-53	3-40		
2	CR.W.	4-1	3-55	3-56	3116	4-1	3-58		
3	"	4-2	3-56	3-56	3116	4-1	3-57		
4	"	4-1	3-56	3-56	3116	4-0	3-58		
5	"	4-2	3-57	3-58	3116	4-1	3-57		
6	"	4-1	3-56	—	3116	4-1	3-58		
7	"	4-0	3-54	—	3116	4-0	3-58		
8	USED 4-6 CR.	4-2	3-57	3-58	3116	4-5	3-57		
9	"	4-3	3-58	3-56	3116	4-4	3-59		
10	"	4-2	3-55	3-55	3116	4-4	3-56		
11	"	4-3	3-56	3-56	3116	4-1	3-55		
12	4-6 CR.	4-0	3-55	3-54	3116	4-0	3-56		
13	"	4-2	3-56	3-54	3116	4-1	3-57		
14	"	4-2	3-57	3-54	3116	4-1	3-59		
15	"	4-2	3-55	3-56	3116	4-1	3-54		
16	"	4-1	3-55	3-55	3116	4-1	3-55		
17	"	4-2	3-54	3-55	3116	4-1	3-58		
18	"	4-1	3-57	3-54	3116	4-0	3-57		
19	"	4-1	3-55	3-57	3116	4-0	3-55		
20	"	4-1	3-56	3-54	3116	4-1	3-54		
21	"	4-1	3-53	3-56	3116	4-0	3-53		
22	"	3-59	3-55	3-54	3116	4-1	3-54		
23	"	3-62	3-55	3-54	3116	4-1	3-55		
24	"	3-63	3-56	3-53	3116	3-63	3-54		
25	"	3-61	3-50	3-54	3116	3-63	3-53		
26	"	4-2	3-55	3-50	3116	4-0	3-53		
27	"	4-1	3-54	3-54	3116	3-63	3-54		
28	"	4-2	3-54	3-56	3116	3-63	3-54		
29	"	4-0	3-55	3-53	3116	3-63	3-55		
30	"	4-1	3-56	3-55	3116	3-61	3-56		
31	STL.	3-49	3-42	3-43	3116	3-63	3-40		
32	"	3-48	3-41	3-40	3116	3-46	3-39		
33	"	3-46	3-46	3-40	3116	3-46	3-40		
34	"	3-46	3-42	3-38	3116	3-46	3-39		
62	"	3-44	3-40	3-39	3116	3-46	3-39		
63	"	3-47	3-41	3-42	3116	3-47	3-40		
64	"	3-48	3-41	3-40	3116	3-50	3-42		
65	"	3-48	3-41	3-40	3116	3-50	3-41		
66	"	3-48	3-43	3-40	3116	3-50	3-41		
67	CR.W.	4-0	3-56	3-56	3116	4-0	3-58		
68	"	4-0	3-57	3-56	3116	4-0	3-57		
69	"	4-1	3-56	3-56	3116	4-0	3-57		
70	"	3-63	3-56	3-56	3116	4-0	3-56		
71	"	4-2	3-59	3-58	3116	4-0	3-60		
72	"	3-63	3-56	3-54	3116	4-0	3-56		
73	"	4-2	3-58	3-56	3116	4-0	3-56		
74	"	4-1	3-57	3-56	3116	4-0	3-57		
75	"	4-2	3-56	3-55	3116	4-1	3-57		
76	"	4-2	3-57	3-56	3116	4-1	3-57		
77	"	4-3	3-57	3-56	3116	4-2	3-58		
78	"	4-2	3-59	3-56	3116	4-2	3-56		
79	"	4-1	3-59	4-0	3116	4-1	3-56		
80	"	4-0	3-59	3-56	3116	4-1	3-56		
81	"	4-1	3-57	3-57	3116	4-2	3-57		
82	"	4-2	3-57	3-56	3116	4-2	3-58		
83	"	4-2	3-60	3-58	3116	4-2	3-58		
84	"	4-3	3-58	3-56	3116	4-1	3-57		
85	"	4-2	3-57	3-57	3116	4-1	3-56		
86	"	4-2	3-58	3-56	3116	4-2	3-57		
87	"	4-2	3-57	3-56	3116	4-1	3-57		
88	"	4-2	3-58	3-56	3116	4-0	3-57		
89	"	4-2	3-58	3-56	3116	4-1	3-58		
90	"	4-1	3-56	—	3116	4-1	3-56		
91	"	4-2	3-57	3-58	3116	4-1	3-57		
92	"	4-2	3-58	3-56	3116	4-1	3-56		
93	"	4-1	3-56	3-57	3116	4-1	3-57		
94	"	4-2	3-58	3-58	3116	4-1	3-58		
95	"	4-2	3-58	3-58	3116	4-1	3-58		
96	"	4-1	3-58	3-58	3116	4-2	3-57		

REPLACEMENT TUBE CALIBRATIONS

TUBE NO.	MAT'L	CALIB. POINT A TOP	CALIB. POINT A BOTTOM	CALIB. POINT B TOP	CALIB. POINT B BOTTOM	CALIB. POINT C TOP	CALIB. POINT C BOTTOM



mediate steps is immediately evident in comparison of corrosion rates and costs of chromium steels.

Tubes of still higher chromium content are used where extremely sour crude are run. An alloy containing 12% chromium and 3% tungsten can be used successfully for this service. This steel also offers improved creep strength and is, therefore, suitable for high temperature service. Excellent corrosion resisting properties and high creep strength is offered by 18% chrome, 8% nickel steel and it is used, therefore, in extremely severe service. However, it should be borne in mind that the nickel content tends to increase the thermal expansion. The uncertainty in the supply of tungsten is causing more general substitution of molybdenum in these alloys, the molybdenum being readily obtainable in this country.

Coming back to the routine testing of still tubes again, there is a little different procedure used when a new alloy steel is being tried out. Tubes of the new material may be built into a still with other tubes provided its coefficient of expansion is in close enough agreement with tubes already in the still. After approximately 10,000 hours of service during which a close watch is kept upon them, they are removed and given a thorough laboratory test to determine what changes may have taken place in the original properties. Further use of the new alloys depends entirely on these laboratory findings.

Test Data Has Other Uses

Corrosion test data has other uses than indicating the selection of the proper tube material. Changes in operation practice of a given still make it necessary to redetermine the safe working life and tube dimensions at the time of withdrawal. Changed working pressures and temperatures or changes of crude work havoc with running tube tests. However the existing data can be put to use to predict whether the tubes are suited to the new operation and for how long a period.

Working out the allowable inside diameters of tubes has been reduced to graphic form also with charts, varying to take account of outside diameters, thickness of coke, and heat input. Fig. 4 applies to the case where 0.3 inch of coke is anticipated in a tube 4¾ inches in outside diameter with a heat input of 10,000 Btu. per square foot. Pressure curves are plotted in co-ordinates of oil temperature and inside diameters of tubes so that, given a pressure and temperature, the inside diameter can be read directly.

Once corrosion rate has been established and pressure and temperature conditions are constant, the engineering department can determine just what wall thickness should be minimum for a given operation. They can prepare data sheets then for the manufacturing division to instruct inspectors at what calipered dimensions to make replacements in any given bank of tubes.

Such a data sheet has columns for the various section of the heater as tabulated in Fig. 1. For each tube section the following data is tabulated: tube numbers, inlet and outlet oil temperatures and pressures, inside and outside diameters of tubes, wall thickness, coke thickness, and maximum heat input in B.t.u. per square foot per hour. From this data there are determined and tabulated together with the above data the minimum wall thickness and maximum inside diameter for the "B" and "C" dimensions (see Fig. 3) separately for each section.

On tubes where end corrosion governs the life expectancy of tubes, efforts are being directed toward bringing the life of the tube ends up to that expected at the center of the tube. In a tube which is rolled into a return bend header, the rolling-in process reduces the wall thick-

Fig. 3—A sample of the data supplied by still tube inspectors at regular intervals to the metallugical department. The accompanying sketch shows the locations of the points of calibration

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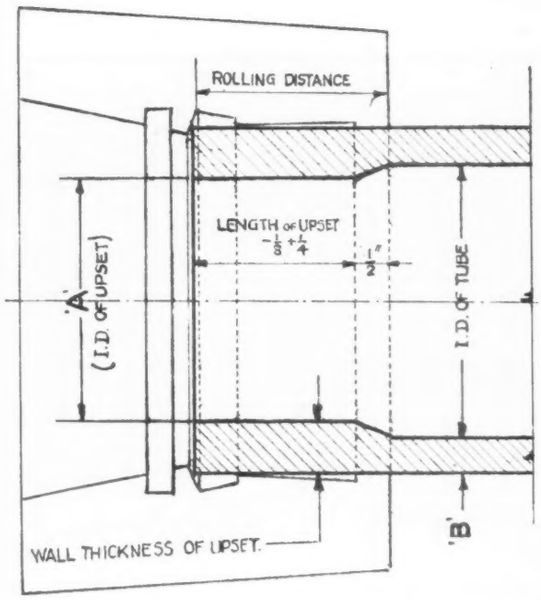


Wall Thickness of Tube 'B'	Dim. 'A'=I. D. of Upset
3/8" to 7/16"	I. D. of tube—3/16"
1/2" to 9/16"	I. D. of tube—7/32"
5/8"	I. D. of tube—1/4"

Fig. 6—The cross section of a tube after upsetting the end and before rolling into place. After rolling, the inside diameter and wall thickness will be the same at ends and center

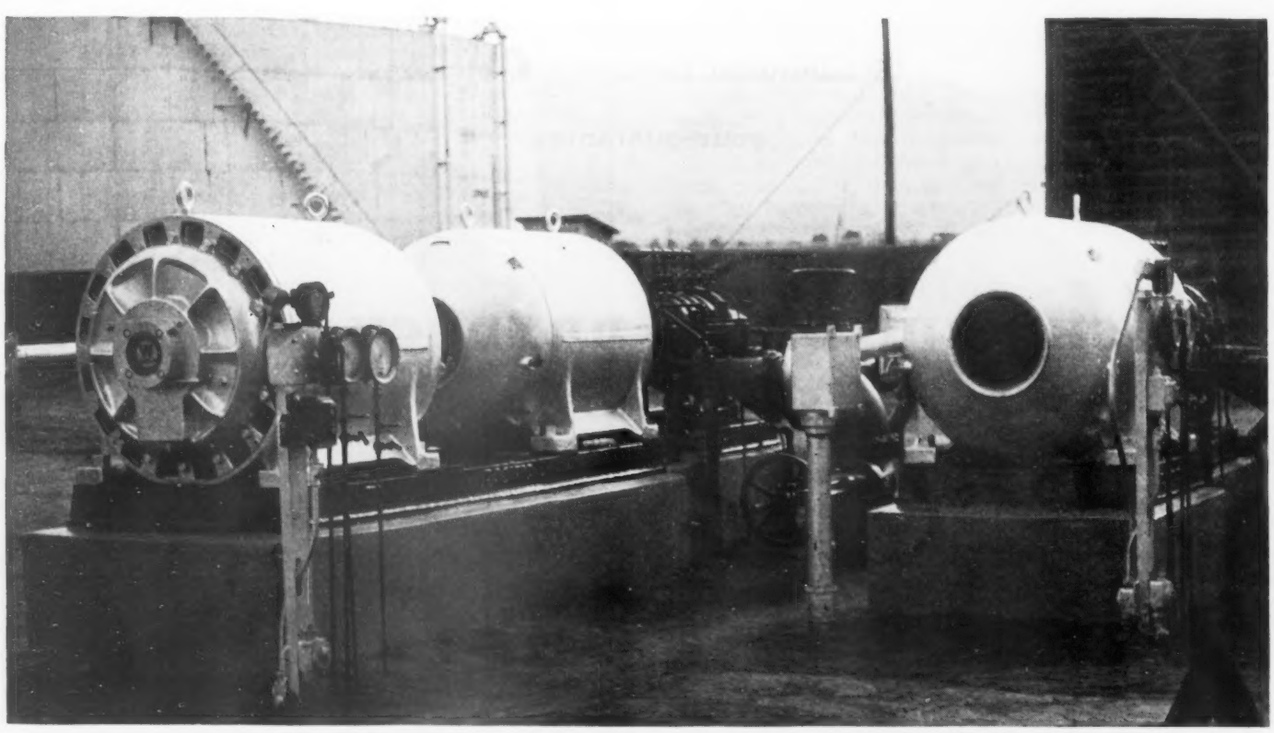
ness at the roll and the working of the metal in this process sets up stresses in the material which hasten the rate of corrosion. There have been various methods used to compensate this faster corrosion. One company has been reported to have been welding two-foot lengths of tubing of higher corrosion resistance on still tubes. Gulf has resorted to tube-end liners and to inside "upsetting" the portions of tubes which are rolled into the header, in order to increase the thickness of the ends of the tubes. The advantage of the latter practice is that the inside diameters at the roll, after rolling, are the same as throughout the tubing. This results in smooth flow without creating any turbulence, itself a factor in the faster corrosion rate at the tube ends.

In the event that tube end corrosion rate be made equivalent to or less than the center, a more thorough job of calipering tubes may be necessitated at the regular calibrating period. Gulf is now prepared for this with a new instrument recently designed by A. G. Kregecz, one of Gulf's engineers. This Four Point Tube Caliper provides for inspection of 30 to 40-foot tubes in a minute to a minute and a half each.

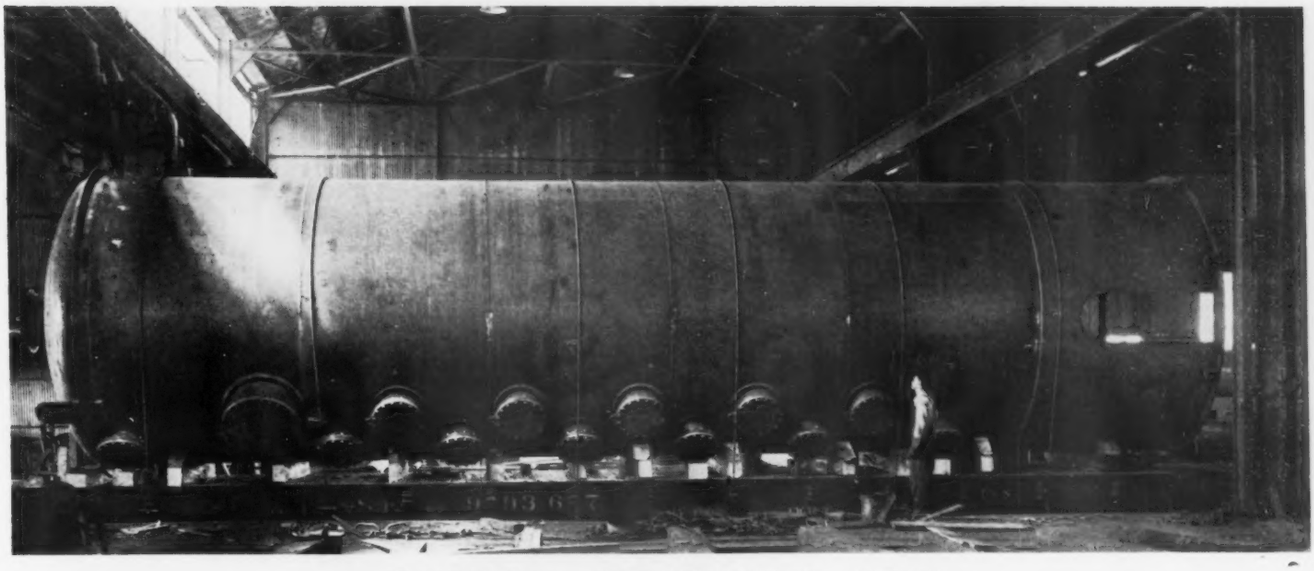
The instrument, illustrated on page R-242, consists of a head which can be thrust through a still tube by a braided flexible tubing. In the flexible tubing are electrical wiring and an air tube which supplies air pressure holding the four prongs against the inside walls of the tube, as the head is drawn back out. Two electric meters calibrated in fractions of inches give instantaneous readings of the inside diameters.

A considerable saving of time and money is effected by the use of this instrument, inasmuch as a tube can now be calibrated throughout its entire length while in place in a still. Heretofore, in order to check the amount or corrosion in middle section of tubes, it has been necessary, from time to time, to remove tube from service, cut it into sections and calibrate in order to determine these dimensions.

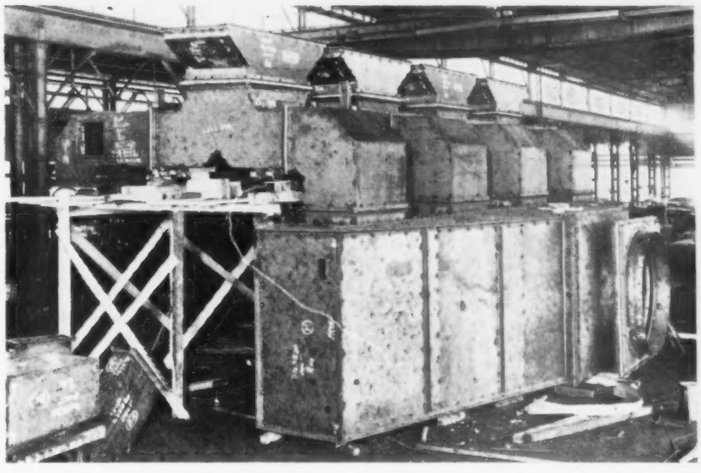
In addition to the above efforts to secure safe and economical operation, "tell-tale drilling" is also done on cracking still tubes. This drilling is done in spirals over the entire outside surface of tubes at any desired intervals. The depth of the drilling is determined by the safe minimum wall thickness of the tube. The use of this drilling furnishes a safeguard against thin walls resulting from eccentric corrosion, which might result in split tubes, causing fires.



Electric power is assuming greater and greater importance in the modern refinery. Three 200-hp., totally enclosed, fan-cooled Westinghouse Motors in General Petroleum Corp.'s pipeline near Bakersfield, Calif. These motors require no building for shelter



12′ x 51′-3″ Vacuum Steam Still 5/8″ Heads — 1/2″ Shell



(Above)—Breeching for Tube Type Heater

(Right) — Berquist Bins for Carbon Black Plant

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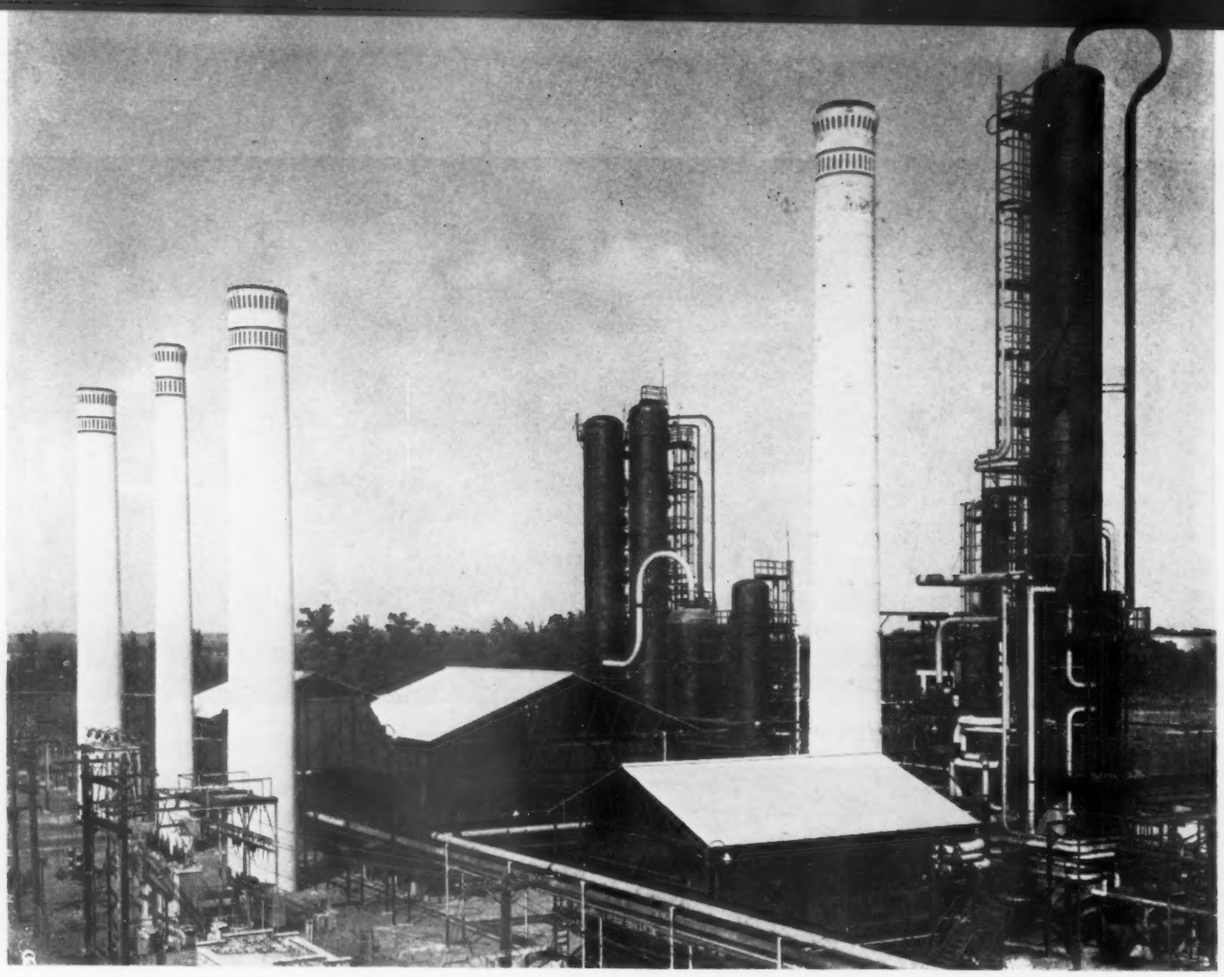


741.35
721.3
731

Cracking Three Different Charge Stocks In Combination Selective Cracking Unit

By E. R. SMOLEY, A. H. SCHUTTE, W. ULLRICH, and H. M. CURTIS*

● Progress in cracking petroleum during the last fifteen years has shown the tremendous advantages in selective cracking of different charging stocks under the specific conditions which produce the optimum results for each type of stock. The designers' answers to this are the combination types of cracking plants.

Van Zandt crude was processed to yield 62% of gasoline, 29% fuel oil with 10% gas and loss. East Texas crude yielded 55.5% gasoline, 8.5% Stoddard solvent, 8.1% kerosine, 23.2% fuel oil and 6.1% gas and loss. Mixed Gulf Coast crudes, containing only about 15% virgin gasoline as compared to 34% for East Texas, 20% for Van Zandt, yielded 64.7% gasoline, 23.8% fuel oil, 12.5% gas and loss, when each is cracked under the best conditions found for each crude.

THE superior results obtained with the modern selective cracking unit are due to many refinements in design, among which the most basic is the segregation of cracking stocks according to both refractivity and boiling range. The general principles involved have been discussed in a previous paper**. These selected stocks are cracked under closely controlled conditions which result in optimum yield efficiency. The principles and practice of selective cracking have been developed over a period of years by a number of equipment and refining organizations. It is the purpose of this paper to describe a highly successful selective combination unit which has recently been put into operation and to outline the major plant operating conditions and overall performance.

The subject plant is a modern combination unit, employing three cracking heaters. It was designed to process 14,000 barrels per day of Van Zandt Crude and has also processed East Texas and Mixed Coastal Crudes. The capital investment represented by a unit of this size makes it imperative that there be a minimum delay in getting the plant into productive operation. It is therefore of interest to note that the finished unit was delivered within

*The Lummus Company, New York and London.

**Combination Selective Cracking—E. R. Smoley, V. Mekler and A. H. Schutte—Nat. Pet. News, Sept. 8, p. 00, and Sept. 22, p. 00, 1937.

New Butane Storage Tanks operate with S & J High Pressure Fittings

At the top is a Hortonspheroid, 92 feet in diameter, having a capacity of 40,000 barrels, and designed to operate at an internal pressure of 10 pounds per square inch.

Left, below, is the S. & J. Compensating Type Automatic Tank Gauge, designed to give a quick, accurate, and safe measurement of the contents of a Hortonspheroid.

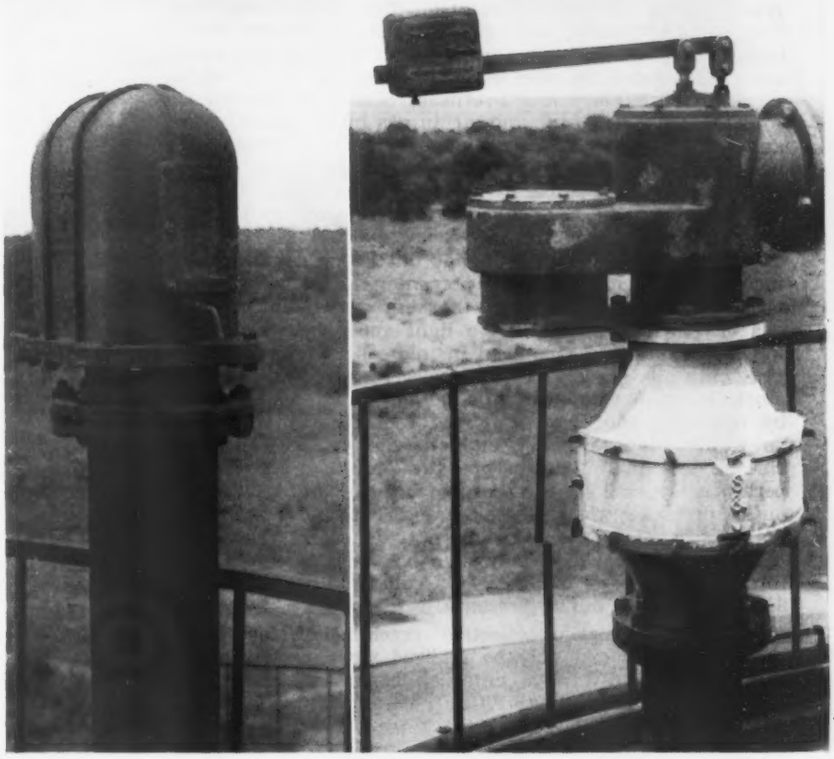
Right, below, is the S. & J. Still Type Breather Valve, made in 3", 4", 6", and 8" sizes. It is mounted above the S. & J. Flame Arrester, which is available in 2", 3", 4", 6", 8", and 10" sizes, all of which are listed by the Underwriters Laboratories.

THE Hortonspheroid, illustrated at the right, is used by the Phillips Petroleum Company for the storage of butane at their Pasadena, Texas, tank farm. It is equipped with S. & J. fittings designed especially for pressure storage.

Among these new fittings is the S. & J. Automatic Tank Gauge, illustrated at the left, below, and designed especially for application to Hortonspheroids. This gauge incorporates an automatic compensator to assure an accurate reading, regardless of any slight movement of the tank roof.

At the right, below, is the new S. & J. Still Type Breather Valve, mounted above the S. & J. Flame Arrester. It was designed to operate at pressures in excess of those encountered in low pressure petroleum storage. The lever arm is graduated for the proper pressure setting of the counterweight. The valve may also be used as a safety vent valve to protect tankage in the event of failure of other venting devices.

The S. & J. Flame Arrester is all aluminum and incorporates a removable tube bank which provides a positive fire stop without restricting the breathing of the tank. A removable cover plate affords ready access for inspection or removal of the tube bank. For maximum fire safety, an Underwriter approved flame arrester should always be installed in conjunction with any conservation, safety, emergency or explosion relief valves.



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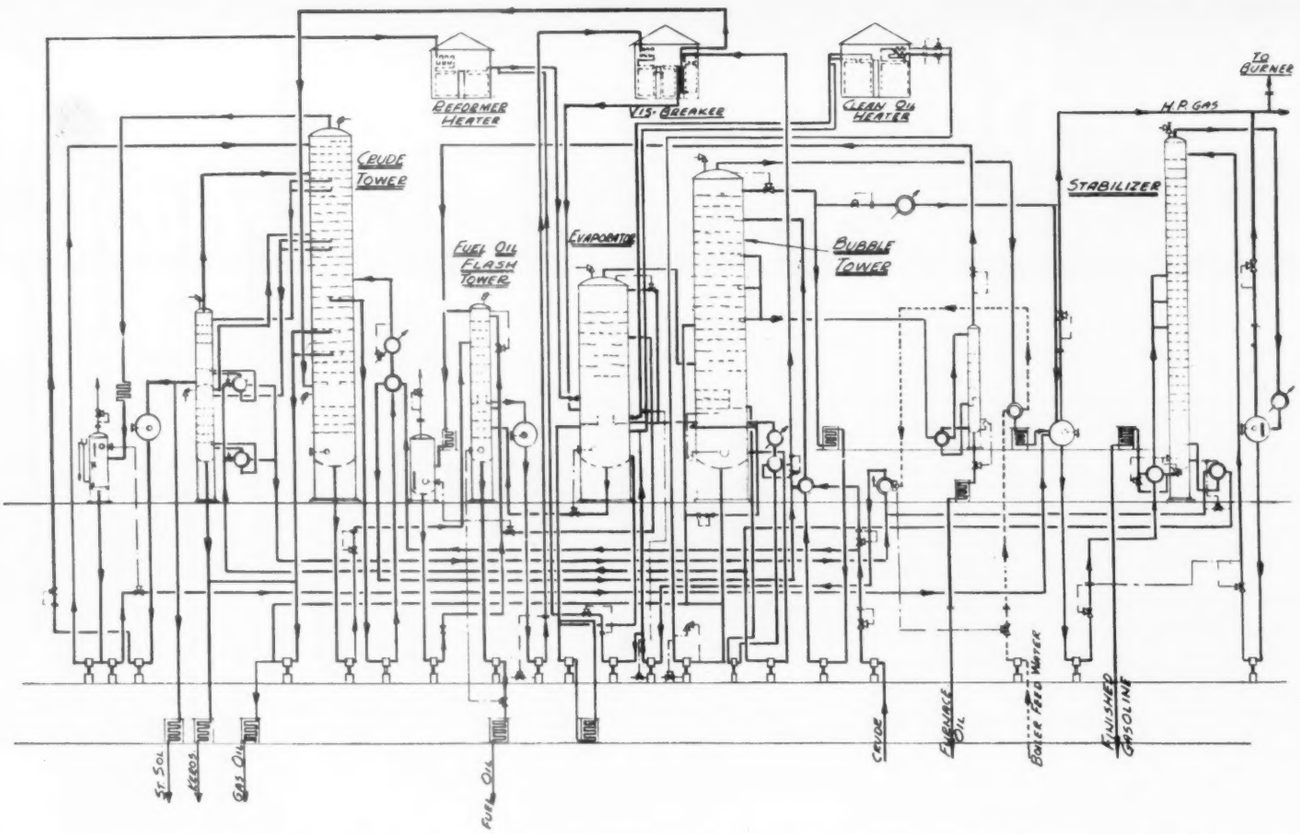


Fig. 1. Process flow diagram of 14-barrel combination unit, the operations of which, on three different charge stocks, are compared in this article

ten months after signing of the contract. Two months later the unit was accepted. Upon the initial firing a thirty-two day run was made under acceptance test conditions before shutting down to allow the usual mechanical inspection for new equipment.

The process flow for this unit is shown in Fig. 1. The crude charge receives preheat from the bubble tower trap tray reflux, quench, and gas oil reflux streams before being passed through a separately fired crude heater. From the crude heater the feed enters the topping tower where virgin naphtha is taken overhead, Stoddard Solvent, reformer charge, kerosine and virgin gas oil as side streams, and reduced crude bottoms. The reduced crude blends with heavy cycle stock by direct contact in the upper section of the fuel oil flash tower where it acts as reflux. The vis-breaker charge is taken from a total drawoff deck in the central section of this tower.

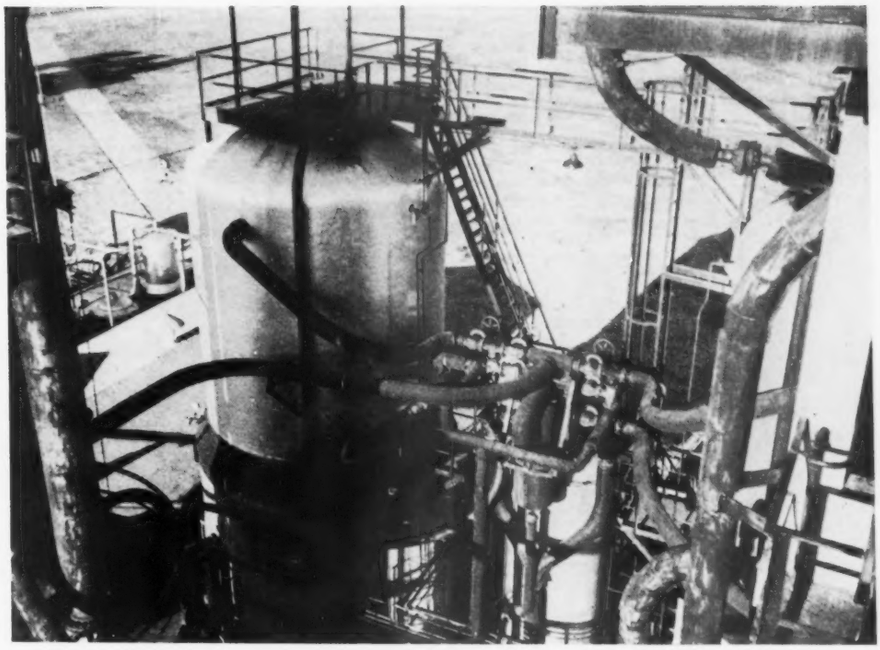
Since a kerosine cut is made on the crude tower and there is a relatively small percentage of lower boiling virgin gas oil in the crude, the segregation of the total gas oil cracking stocks into a light and a heavy circulating stream is not economical in this case. There is, therefore, only one gas oil coil. In order to keep the charging stock for this coil clean, the boiling range is narrowed by operating the evaporator and fuel oil flash tower so as to include the heavy ends in the viscosity breaker charge. The gas oil heater operates at 940 to 990°F. temperature (depending on the crude charged) and 500 pounds outlet pressure; the vis-breaker at 880 to 885°F. and 240 pounds. In addition to the above two heaters there is a reformer heater which may also be operated as a once-through virgin gas oil coil. This coil usually operates at 940°F. and 750 pounds pressure.

The advantage of selective cracking of segregated charging stocks can only be realized when each stock is cracked under carefully controlled conditions of temperature and soaking time. With the conventional type of heater the time allowed for cracking is fixed by the existing surface and the maximum transfer temperature which can be maintained without excessive coke formation. Particularly in the case of a unit of the type described, where many different crudes must be run, it is virtually impossible to design for optimum cracking conditions for each stock without providing independent

TABLE 1
Crude Inspections—Topping Operations

KEY:
Operation I—Cracking Van Zandt Crude—Reforming Heavy Virgin Naphtha
Operation II—Cracking East Texas Crude—Reformer used for once-through gas oil cracking
Operation III—Cracking Mixed Gulf Coast Crudes (chiefly Bosco and Clarkwood)—Reforming Heavy Virgin Naphtha

Crude Inspections	I	II	III
Crude	**Van Zandt**	**East Texas**	**Mixed Gulf Coast**
Gravity, deg. A. P. I.	32.4	38.3	30.1
I. B. P.	180	90	240
5% @ deg. F.	224	105	335
10%	262	155	385
15%	304	208	421
20%	350	260	448
25%	400	309	470
30%	444	360	492
35%	484	408	508
40%	524	459	524
45%	564	508	542
50%	610	558	560
55%	656	610	580
60%	686	660	600
65%	...	712	635
70%	...	...	670
75%	...	...	682
80%	...	...	714
Topping Operation			
Virgin Gasoline			
Volume per cent on crude	20.0	25.5	15.0
E. P. deg. F.	354	342	390
O. N., C. F. R., A. S. T. M.	56.6	63.8	60.0
Gravity, deg. A. P. I.	67.3	63.9	52.6
5% deg. F.	141	133	168
Virgin Naphtha			
Volume per cent on crude	16.2	None	26.8
Gravity, deg. A. P. I.	67.3	63.9	52.6
5% deg. F.	363	...	423
E. P. deg. F.	501	...	559
Stoddard Solvent			
Volume per cent on crude	None	8.5	None
Gravity, deg. A. P. I.	...	47.8	...
I. B. P. deg. F.	...	305	...
E. P. deg. F.	...	406	...
Kerosine			
Volume per cent on crude	None	8.1	None
Gravity, deg. A. P. I.	...	41.1	...
I. B. P. deg. F.	...	380	...
E. P. deg. F.	...	505	...
Virgin Gas Oil			
Volume per cent on crude	13.3	13.8	23.2
Gravity, deg. A. P. I.	34.9	37.1	31.4
5% deg. F.	460	450	514
E. P. deg. F.	704	632	648
Color, N. P. A.	1	1	1¼
Reduced Crude			
Volume per cent on crude	50.6	44.1	35.0
Gravity, deg. A. P. I.	19.6	24.3	26.7



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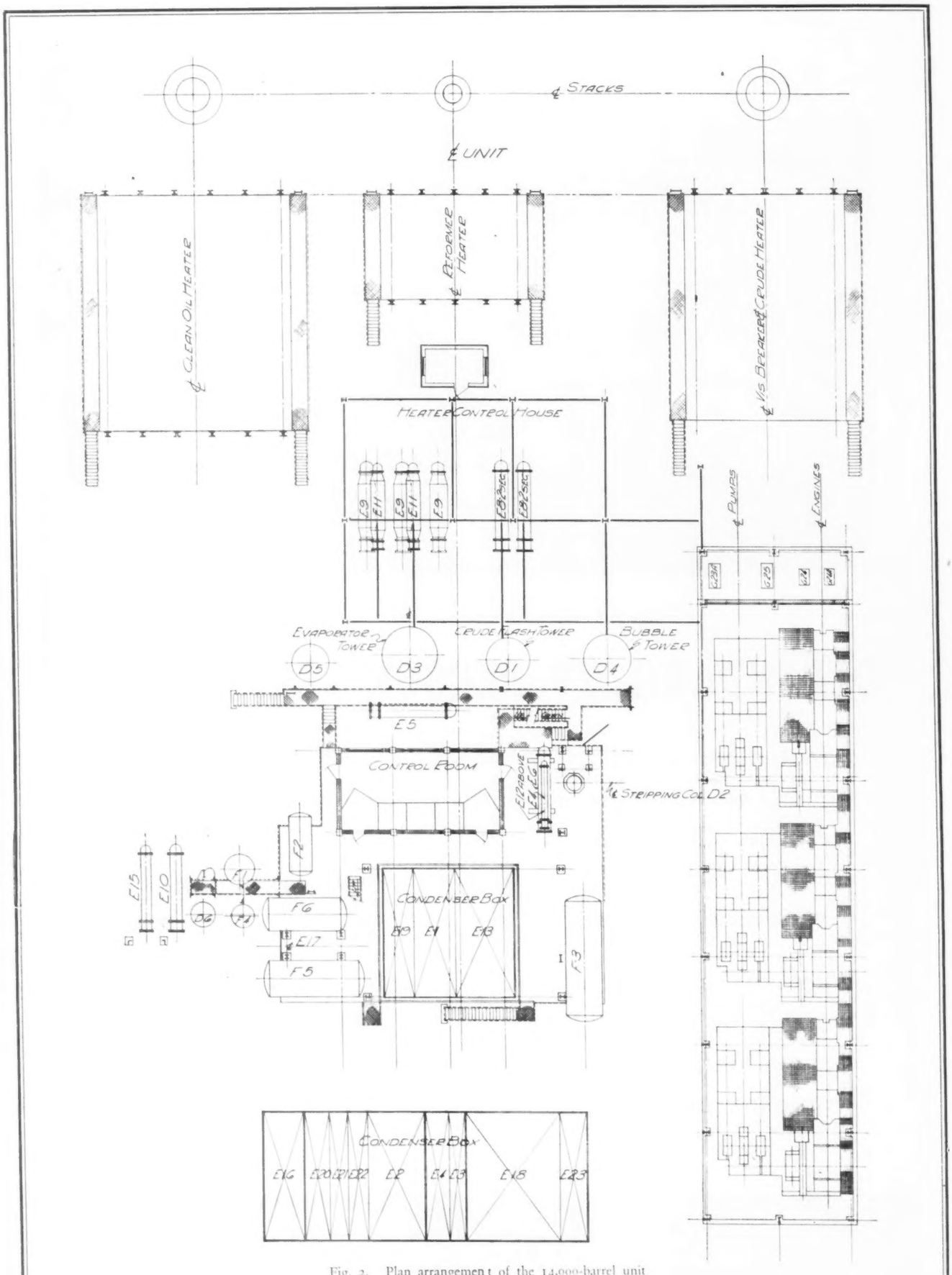

Fig. 2. Plan arrangement of the 14,000-barrel unit

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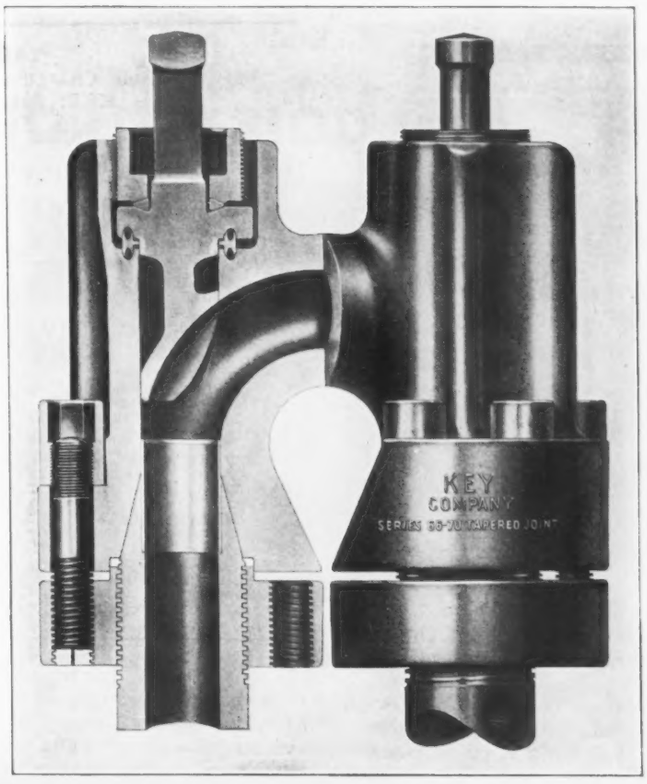

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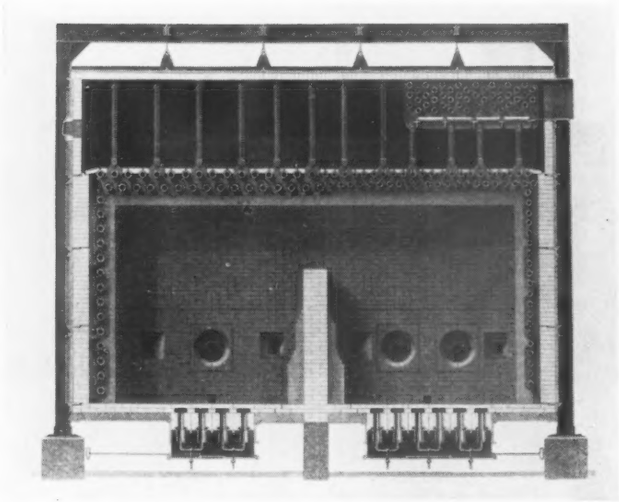

Fig. 3. Typical tube heater arrangement as used in the type of unit discussed here

control of the heating and soaking conditions. This is done by providing separately fired heating and soaking chambers in the furnace settings. This arrangement has been successfully used in a number of cases and provides an unusual degree of operating flexibility. In order that the heaters may operate with a maximum freedom from coke formation and with a satisfactory degree of temperature control in all parts of the preheating and soaking sections, it is important that the rate of heat transfer to the tubes be kept as uniform as possible. These conditions are obtained by a proper correlation between the flow of oil through the tubes, the flow of combustion products from the heating chamber and the disposition of tube surfaces. A typical heater arrangement is shown in Fig. 3. Narrow, restricted areas through which the hot flue gases must pass usually result in eddy currents, channeling, dead corners and hot spots. The method of handling the combustion products which has been most successful is to remove them over the entire area of the roof. In the type of heater used on the unit which is being described the upper row of roof tubes is covered by special baffle tiles which give a restricted clearance between tube and tile, and therefore, a high gas velocity over the tube surface. This results in much higher convection transfer rates for the upper roof tubes and thereby makes the total transfer rates uniform for all tubes in the radiant section.**

TABLE 2
Crude Charge and Heating Data
KEY: Same as Table 1

	I	II	III
Crude	**Van Zandt**	**East Texas**	**Mixed Gulf Coast**
Crude Charge Rate, B/D	**11,575**	**14,384**	**8,947**
Vis. Breaker Heater			
Thruput, B/D	10,800	10,800	10,260
Feed gravity, deg. A. P. I.	18.2	21.3	19.3
Inlet temperature, deg. F.	610	620	575
Outlet temperature, deg. F.	880	885	905
Outlet pressure, lbs./sq. in.	240	240	240
Clean Oil Heater			
Thruput, B/D	19,840	20,370	25,750
Feed:			
Gravity, deg. A. P. I.	25.5	26.0	19.4
50 per cent @ deg. F.	508	508	499
90 per cent @ deg. F.	632	645	595
E. P. @ deg F.	674	676	636
Color, N. P. A.	2½+	1½+	2½
Inlet temperature, deg. F.	700	705	725
Outlet temperature, deg. F.	980	940	990
Outlet pressure, lbs./sq. in.	500	500	500
Reformer or Once-Through Virgin G. O. Heater			
Thruput, B/D	1,870	1,915	2,400
Feed:			
Gravity, deg. A. P. I.	46.5	37.1	35.1
50 per cent @ deg. F.	419	532	469
90 per cent @ deg. F.	472	596	512
E. P. @ deg. F.	501	632	539
Inlet temperature, deg. F.	435	250	455
Outlet temperature, deg. F.	940	940	965
Outlet pressure, lbs./sq. in.	750	750	750

Reference to the plot plan, Fig. 2, will show the general arrangement of the items of equipment. The towers are symmetrically grouped for maximum operating convenience and minimum piping runs. The hot and cold oil pumps are separated. All suction and discharge lines are overhead, leaving the pumphouse floor free from obstructions. The control house is centrally located above the pumphouse, giving the operators a general view of the plant and easy access to control valves and vessels where operating levels must be maintained.

Tables 1 to 6 summarize the operating conditions, yields, product inspections and fuel economy when running Van Zandt, East Texas and Mixed Coastal crudes. With regard to fuel economy it should be noted that the

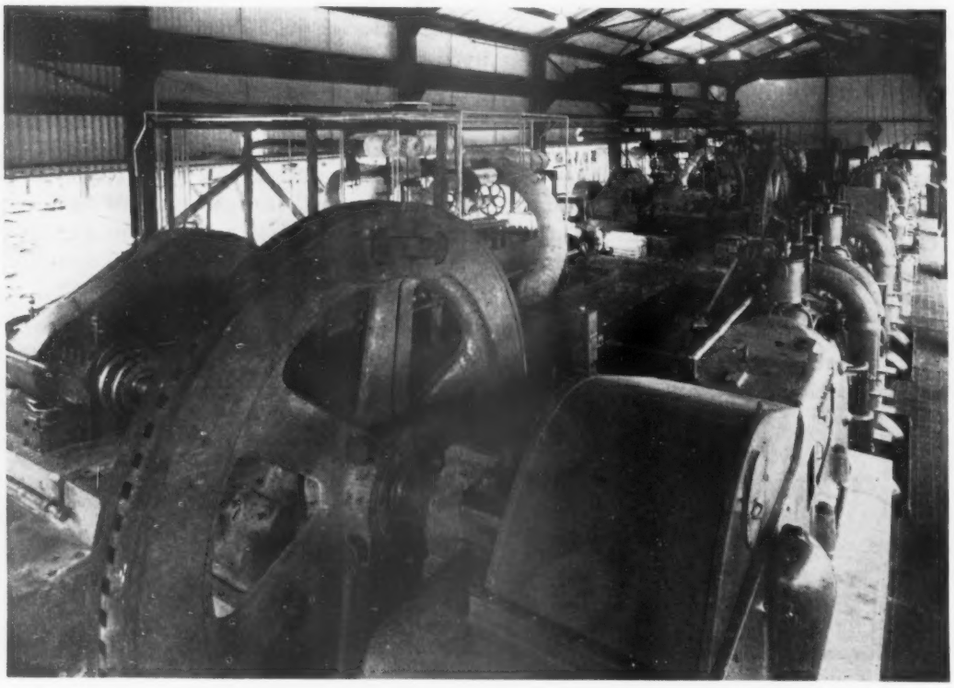

Fig. 4. Gas engine-driven hot oil pumps used in this combination unit

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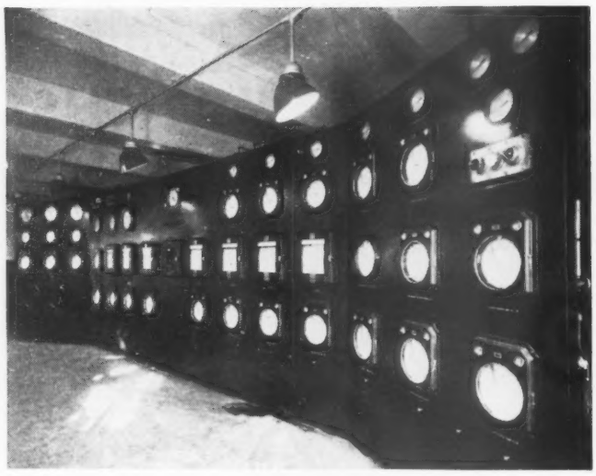

Fig. 5. Operating control board, so arranged to provide the best visibility for the operator at a central point in front

heater charge pumps are gas engine driven. Waste heat from the unit is used for steam generation in shell and tube units wherever the temperature level justifies it. Table 6 shows a steam production of 252,000 to 535,000 pounds per day.

The tabulated run data will be discussed in detail for each crude charging stock in the following sections. The yields, product quality, overall fuel efficiency and heater efficiencies which were obtained during the plant tests demonstrate the satisfactory operation of this unit under varying charge stock conditions which demanded an unusual degree of flexibility. The different crudes were processed during the same run with a minimum of time required for adjusting plant conditions. The design basis for the unit was 14,000 B/D of Van Zandt crude when making kerosine and 11,000 B/D of this crude when cracking to ultimate yields.

OPERATION I

This operation was on 32.4° A.P.I. Van Zandt crude with a charge rate of 11,575 B/D. A heavy virgin naphtha of 46.5° A.P.I. gravity and 501° F. end point was cracked once-through in the reformer heater. The quantity of this material was 16.2% by volume on the crude or a total of 1870 B/D. This charge was cracked under the mild conditions of 940° F. and 750 lbs./sq.in. pressure at the heater outlet. These conditions gave satisfactory octane number on the overall stabilized gasoline with optimum yields.

The virgin gas oil was pumped directly to the high pressure bubble tower and blended with recycle feed to the clean oil heater. The quantity of virgin gas oil was 13.3% of the crude charge or 1540 B/D. The total clean oil heater charge was 19,840 B/D. This 25.5° A.P.I. stock was cracked at 980° F. and 500 lbs./sq.in.

A 50.5% topped crude of 19.6° A.P.I. was withdrawn from the bottom of the crude tower and pumped through steam generators into the upper section of the fuel oil flash tower. Here it served as reflux and combined with the heavy recycle stock flashed from the fuel oil in the lower section of this tower. This 18.2° A.P.I. gravity combined stock, amounting to 10,800 B/D, was charged to the viscosity breaker heater which was operated with a furnace outlet temperature of 880° F. and 240 lbs./sq.in. pressure.

The top of the fuel oil flash tower was refluxed with the overhead distillate to maintain a temperature of 480° F. thereby controlling the quality and quantity of the viscosity breaker feed. The excess flash tower distillate was pumped to the high pressure bubble tower where it served as reflux and was fractionated into clean oil heater charge and gasoline. The evaporator was maintained at 220 pounds pressure, 770° F. top, 815° bottom and 820° flash zone; the fuel oil flash tower at 5 pounds pressure and 705° bottom temperature. Under these conditions a 7.5° A.P.I. gravity final fuel oil was obtained which had a 290 Furol viscosity at 122° F. and 35° F. pour.

The unstabilized gasoline from the bubble tower was mixed with the straight run gasoline from the crude

TABLE 3
Fractionating Equipment
KEY: Same as Table 1

Crude	I Van Zandt	II East Texas	III Mixed Gulf Coast
Crude Tower			
Operating pressure, lbs./sq. in.	20	15	9
Top temperature, deg. F.	290	270	320
Naphtha drawoff, deg. F.	440	370	475
Kerosine drawoff, deg. F.	...	445	...
Gas oil drawoff, deg. F.	600	550	595
Flash zone, deg. F.	700	650	675
Fuel Oil Flash Tower			
Operating pressure, lbs./sq. in.	5	6	8
Top temperature, deg. F.	480	485	430
Vis. breaker charge drawoff deg. F.	610	615	575
Bottom temperature, deg. F.	705	715	695
Evaporator Tower			
Operating presure, lbs./sq. in.	220	220	215
Top temperature, deg. F.	770	785	765
Flash zone, deg. F.	820	835	820
Bottom temperature, deg. F.	815	810	805
Bubble Tower			
Operating pressure, lbs./sq. in.	215	215	210
Top temperature, deg. F.	435	425	420
Middle temperature, deg. F.	560	540	655
Bottom temperature, deg. F.	710	705	735
Bottom temperature, deg. F. deg. F.	710 480	705 460	755 430
Trap tray reflux into tower, deg. F.	125	185	125
Stabilizer Tower			
Operating pressure, lbs./sq. in.	250	275	270
Top temperature, deg. F.	155	145	170
Feed temperature, deg. F.	315	335	330
Bottom temperature, deg. F.	425	425	440

TABLE 4
Yields and Product Inspections **Key: Same as Table 1**

Crude	I Van Zandt	II East Tex.	III Mixed Gulf Coast
Yields (Volume % on crude)			
Stabilized Gasoline	62.0	55.5	64.7
Stoddard Solvent	...	8.5	...
Kerosine	...	8.1	...
Fuel Oil	29.1	23.2	23.8
Gas & Loss	16.0	6.1	12.5
Stabilized Gasoline			
O. N., G. F. R., A. S. T. M.	65.1	65.8	71.2
Gravity, Degrees A. P. I.	62.2	60.8	54.8
I. B. P., Degrees F.	99	96	99
10 Per Cent@ Degrees F.	140	137	189
50 Per Cent @ Degrees F.	241	245	264
90 Per Cent @ Degrees F.	348	350	368
E. P. Degrees F.	402	401	394
Reid Vapor Pressure	7.8	8.6	8.2
Color, Untreated, Saybolt	†21	†23	†22
Gum, Untreated, cu. dish, mg/ 100. cc.	13.7	9.8	14.6
Fuel Oil			
Gravity	7.5	10.0	7.0
Vis., Furol @ 122 Degrees F.	290	130	86
B. S. & W.	0.2	0.3	0.1
Sediment, %	0.072	0.149	0.046
Pour, Max.	35	20	30
Flash, P. M., Degrees F.	230	210	230

TABLE 5
Flue Gas Analyses and Heater Efficiencies

Heaters	% Eff.	Flue Gases Analysis CO_2	Flue Gases Analysis O_2	Draft in inches
Vis. Breaker & Crude Oil	72.3			
South Side		9.0	5.7	.36
South Side Center		8.5	7.7	.44
North Side Center		9.4	5.8	.40
North Side		9.3	6.1	.37
Stack (Final Breeching)		8.9	6.9	.49
Reformer	72.1			
South Side		8.6	7.6	.10
South Side Center		10.6	4.6	.10
North Side Center		11.0	4.1	.10
North Side				.10
Stack (Final Breeching)		10.5	4.0	.47
Clean Oil	75.4			
South Side		11.2	3.0	.27
South Side Center		11.8	2.2	.35
Center		12.0	1.7	.39
North Side Center		11.1	2.7	.37
North Side		10.4	4.2	.37
Stack (Final Breeching)		11.0	3.4	.53

SEVEN

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tower and the whole quantity stabilized in a fractionating column which was run as an integral part of the unit. This stabilization produced a 7.8 lbs. Reid finished gasoline bottoms and gas overhead.

The operation gave a total overall yield of 62% by volume on the crude charge of 7.8 lbs. Reid vapor pressure, 65 octane number gasoline, a 29.1% yield of Bunker "C" specification fuel oil and 10% gas.

OPERATION II

During this operation East Texas crude of 38.3° A.P.I. gravity was processed into the products shown in Table 4, that is, gasoline, stoddard solvent, kerosine, fuel oil and gas. The crude charge rate was 14,384 B/D. The reformer was used as a once thru gas oil coil since all of the naphtha and kerosine were taken out as finished products. A 25.5% cut of 342 E.P. straight run gasoline was taken overhead from the crude tower. The rest of the operation was essentially the same as in operation I, except for temperatures and thruputs on the different cracking coils.

The once thru gas oil coil was operated with an outlet temperature of 940°F. and a pressure of 750 lbs. / sq. in. The charge rate was 1915 B/D or 13.8% by volume of crude charge of a 37.1° A.P.I., 632 E.P. stock. The low coil inlet temperature of 250°F. was due to the fact that the virgin gas oil passed thru a crude exchanger before going to the feed accumulator.

The clean oil coil was maintained at 940°F. outlet and 500 lbs. / sq. in. pressure. The charge to this coil was 20,370 B/D of a 26.0° A.P.I., 676 E.P. stock having a 1½+N.P.A. color. Due to taking virgin products from the crude tower and once thru cracking the virgin gas oil there was very little virgin feed stock to the clean oil coil. This coil could be operated at a high recycle ratio under mild conditions to enhance the yields, while still meeting octane requirements.

Operating conditions maintained on the vis-breaker coil outlet were 885°F. and a pressure of 240 lbs. / sq in. As in operation I the composition of the vis-breaker charge stock was approximately a 1:1 ratio of heavy recycle and virgin reduced crude. The characteristics of the charge for this operation were 21.3° A.P.I. gravity, 495°F. initial and 50% at 688°F. The charge rate to this coil was 10,800 B/D.

This operation gave very satisfactory results from every viewpoint. A 55.3% yield of 400°F. E.P. finished stabilized gasoline of 65.8 octane, 8.6 lbs. Reid vapor pressure was obtained while making 8.5% Stoddard solvent of 305 I.B.P. to 406 E.P. and 8.1% finished kerosine with a boiling range of 380° to 503°F. This is equivalent to 70% gasoline when running to ultimate yields. The fuel oil had a 10.0° A.P.I. gravity and 130 Viscosity Furol at 122°F. It is interesting to note that there was only a 6.1% gas yield from this operation.

OPERATION III

When the unit was swung from the East Texas crude operation previously described to Mixed Gulf Coast crudes a careful and quick manipulation of operating conditions had to be made because these charge stocks are very dissimilar in characteristics. East Texas crude contains 34% of 400 E.P. gasoline but Mixed Gulf Coast has about 15%. The Mixed Gulf Coast charge, which was preponderantly Bosco and Clarkwood, had a large percentage cut boiling between 400°F. and 700°F., and a proportionately smaller amount of reduced crude. Despite this difference in charge stocks, the unit was lined out without delay and the crude thruput capacity and operating levels rapidly established.

From this charge stock the straight-run products were 15.0% gasoline, 26.8% reformer charge, 23.2% gas oil and 35.0% reduced crude, from a crude charge of 8947 B/D. The reformer was maintained at the same conditions as for the previous operations and charged with 2400 B/D of a 35.1° A.P.I. stock which had a boiling range of 423 to 539°F.

The lower crude thruput capacity reflects the higher percentage of intermediate boiling range virgin gas oil and the greater refractivity of the clean oil charge obtained from these Coastal crudes. The clean oil coil therefore operated at a higher charge rate, 25,750 B/D, and the outlet temperature was raised to 990°F. In this case the clean oil charge was 19.4° A.P.I., 50% at 499°F. and 636 E.P. This low end point was obtained by running a lower temperature on the top of the evaporator and fuel oil flash tower, thus increasing the vis-breaker charge. This flexibility allowed a better balance of heater duties. The vis-breaker charge was 10,260 B/D, or nearly the same as for the Van Zandt and East Texas operations. Due to the refractory nature of the stock this coil operated at 905°F. and a ratio of virgin reduced crude to recycle stock of 1 to 2.3. These conditions may be compared with 885°F. outlet temperature and 1 to 1 recycle ratio for the Van Zandt operation.

TABLE 6
Utilities
KEY: Same as Table 1

Crude	I Van Zandt	II East Texas	III Mixed Gulf Coast
*Fuel consumption, % crude charge	5.93	5.56	6.79
Steam produced lbs./day of 150-lb. steam	446,000	252,400	534,900
Steam consumed lbs./day	441,000	445,900	462,000
Net steam consumed	None	193,500	None

*Fuel to the heaters, as equivalent Bunker "C" fuel oil.

The overall yields obtained on the Mixed Gulf Coast charge stock were 64.7% stabilized gasoline, 23.8% fuel oil and 12.5% gas. The gasoline was 71.2 octane number, 8.2 Reid vapor pressure; the fuel oil 7.0° A.P.I., 86 Furol vis at 122°F., 30°F. pour and 0.1% B.S.

GENERAL COMPARISON OF OPERATIONS

The data presented for the three operations described above permits an interesting comparison to be made of the operating conditions for this unit when processing crudes of rather widely different character. The clean oil heater thruput is seen to increase with the refractivity of the stock, and the crude capacity to decrease, allowing of course for the higher crude rate obtained on East Texas due to taking off straight-run products.

The octane number and end-point of the virgin naphtha cut taken while running Van Zandt was set by the optimum conditions for overall octane yield relationship. On East Texas Crude the end point and octane number of this virgin cut were fixed by the cut point of the Stoddard solvent taken as a product. In the case of the mixed Coastal charge, a 400 E.P. virgin gasoline was taken since the more refractory cracking stocks naturally gave a higher overall octane number when processed under conditions sufficiently severe to give optimum yields.

Table 5 shows the flue gas analyses taken on the three heaters during operation III, the draft gauge readings and the calculated heater efficiencies. These tests were made under normal plant running conditions and demonstrates the high degree of heat economy obtained with the type of heater described in the introductory section of this paper.

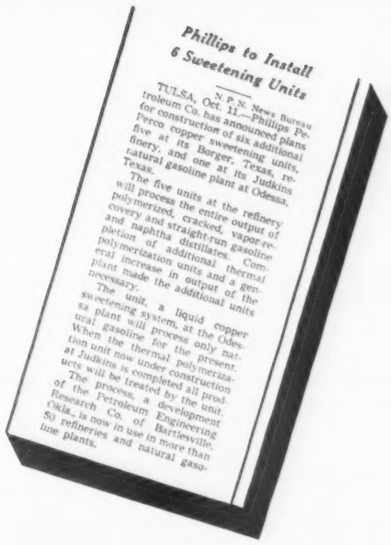
The equivalent fuel to the heaters, expressed as volume percent fuel oil on the crude charge, is given in Table 6. These ranged from 5.56 to 6.79%, depending on the type of charge stock and the cracking temperatures and circulation rates required. As previously mentioned, the waste heat from this unit is used to produce steam wherever economically justifiable. The steam production and consumption figures are also given in this Table. It will be noted that there was a net steam production for two of the operations.

The atmospheric distillations of the crudes, given in Table 1, show weathering of the sample on Van Zandt and Mixed Gulf Coast.

The overall yields were obtained by tank gauges under acceptance test run conditions. The gas loss on the topping operation is included in the overall gas and loss.

SUMMARY

Plant data on various crudes have been presented demonstrating the results obtained in actual refinery practice by applying the principles of combination selective cracking. These principles were briefly discussed and illustrated by a flow sheet of a modern unit recently put into operation. Plot plan arrangement was also shown along with details of heater design and plant photographs. A discussion of the operating data on three crudes of widely differing characteristics completes the paper.



Phillips to Install
6 Sweetening Units

N P N News Bureau

TULSA, Oct. 11.—Phillips Petroleum Co. has announced plans for construction of six additional Perco copper sweetening units, five at its Borger, Texas, refinery, and one at its Judkins natural gasoline plant at Odessa, Texas.

The five units at the refinery will process the entire output of polymerized, cracked, vapor recovery and straight-run gasoline and naphtha distillates. Completion of additional thermal polymerization units and a general increase in output of the plant made the additional units necessary.

The unit, a liquid copper sweetening system, at the Odessa plant will process only natural gasoline for the present. When the thermal polymerization unit now under construction at Judkins is completed all products will be treated by the unit.

The process, a development of the Petroleum Engineering Research Co. of Bartlesville, Okla., is now in use in more than 50 refineries and natural gasoline plants.

Reprint from the October 13 issue of National Petroleum News

SIX MORE PERCO COPPER SWEETENING INSTALLATIONS BEGUN THIS WEEK

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Alcohol-Gasoline Mixtures

Alcohol-gasoline mixtures sell themselves to British motorists without restrictive laws. A. R. Ogston, Journal of the Institution of Petroleum Technologists, Aug., 1937.

It is difficult to understand why countries where petroleum is plentiful should consider it necessary to enforce the use of alcohol in place of petroleum. In England, where no legislation enforces its use, many motorists are inclined to class alcohol as a luxury addition to their petrol. This is in contrast to France and other countries where alcohol motor fuels have gained a bad reputation; possibly due to improper mixtures or engines unadjusted to its use.

Adoption of alcohol mixtures by certain companies in Great Britain came about through circumstances largely peculiar to the country. First, the heavy horsepower tax, based on cylinder bore only, resulted in the typical British car being powered by a small-capacity long-stroke engine of comparatively high compression ratio. These were more prone to detonation than American or Continental car engines. Consequently the British motorist became knock conscious before motorists of other countries.

The fact that a tax as high as 8-pence per gallon was levied on imported gasoline encouraged the use of a home-produced product such as benzol as a blending material. This had the double advantage of being exempted from tax and improving anti-knock properties.

As soon as absolute alcohol became available at an economic price, it was natural that companies which had not had the opportunity of marketing an anti-knock quality should be attracted to the possibilities of using alcohol to enable them to compete with the benzol mixtures and leaded fuels being supplied by their rivals.

Its very high anti-knock value is attributable to two factors: its high spontaneous ignition temperature as compared with gasoline and its high latent heat of vaporization. It cannot be disputed that a blend of gasoline and ethyl alcohol is not as efficient a fuel as gasoline of a similar anti-knock value, on account of the relatively low calorific value of the alcohol. The addition of alcohol and benzol to raise anti-knock rating by 10-15 octane numbers will result in a fuel which will give more efficient operation in high-compression engines than straight gasoline which would be handicapped by severe detonation.

With fuels of 65-85 octane number an increase of one octane number will permit an increase of about 1% engine efficiency provided the engine is designed to take advantage of the higher-knock value. The addition of 1% ethyl alcohol increases the knock rating of a gasoline by at least 0.7 octane number. Thus a 15% blend results in a loss of 5% calorific value but the octane rating would have been increased by at least 10%.

The author realizes that the foregoing conflicts with arguments advanced by the opposition. For instance, Egloff and Morrell have claimed that any improvement in anti-knock and consequent efficiency provided by alcohol was more than offset by increased consumption due to the lower calorific value and have shown a table which appeared to prove this.

While the addition of 15% alcohol was shown to give an increase of 12 octane numbers, the table also purported to show that the possible increase of engine efficiency which could be obtained with this higher anti-knock value would be only 4½%. This is obviously incorrect. Furthermore, in the same table a 15% alcohol blend was shown to increase consumption by 7½% which is about 50% more than is the case in actual practice.

Anti-knock properties of alcohol are largely derived from the relative coolness of the ingoing charge. For this reason the C. F. R. Motor Method of rating fuels, which artificially heats the ingoing mixture to 300° F. before it reaches the cylinder is believed to nullify most of the high latent heat of vaporization of the alcohol fuel which contributes largely towards its anti-knock qualities. The almost fanatical preference of some English motorists for alcohol fuel is a result of the smooth "feel" of the engine which gives the driver the feeling of better performance although actual verification of acceleration and maximum speed discloses no difference in performance with gasoline of similar octane rating.

* * *

Cracked Diesel Fuel

A plant operating 1000 *Hp of diesels can save* $3000 *per year by replacing straight-run gas oil fuels with cracked products. H. Bottomley, Refiner & Natural Gasoline Manufacturer, September,* 1937.

Diesel operators should investigate their fuels and the possibilities of improvement. In view of the widely divergent diesel fuel specifications recommended by engine manufacturers, it is believed operators are not operating their engines on the most satisfactory and economical fuels now available.

It is generally conceded that in the high speed engines fuels of predominately paraffinic nature or those of high cetane number should be used. With the increasing premium placed on virgin stocks for cracking purposes it is apparent that some compromise must be effected. Modification of engine design or addition of "dopes" are likely alternatives. Diesel fuel production by hydrogenation of carbonaceous materials may be an industry of the future.

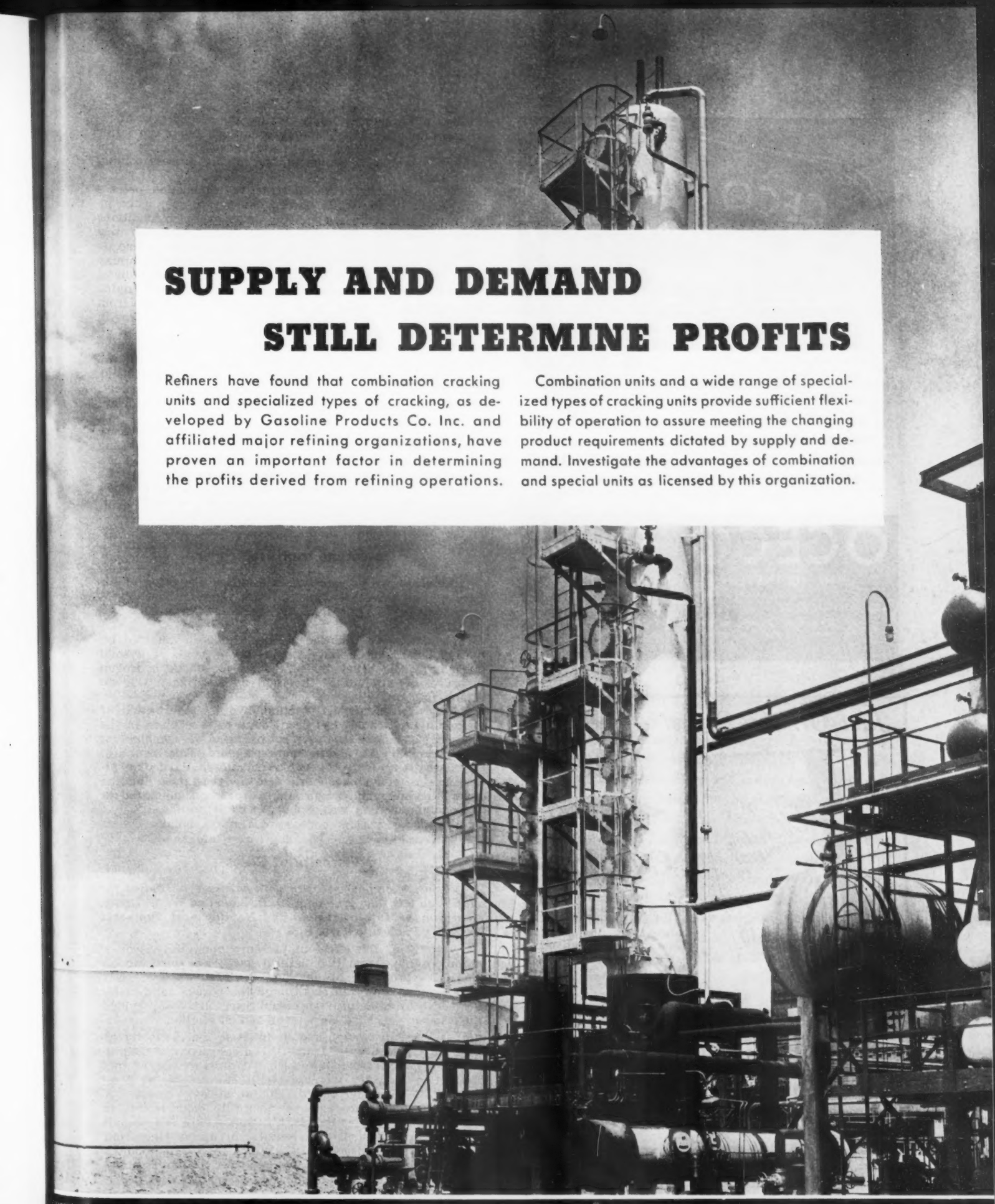
To supply a fuel with a minimum of difficulty and maximum of profit the refiner and marketer must make the fuel in the cracking process. Tests of four fuels were made on Fairbanks-Morse, 2-stroke cycle, 12 by 15-inch vertical, single cylinder, solid-injection type engine from which the test results indicated most favorable operating characteristics with the cracked gas oils.

* * *

Diesel Combustion Process

Diesel engine combustion process fails to yield precise knowledge because of heterogeneity of the charge. G. D. Boerlage and J. J. Broeze, American Chemical Society paper, Rochester, Sept. 10.

The chemistry of combustion in the diesel engine is obscure. In general, combustion of hydrocarbons is a direct oxidation or a decomposition followed by oxidation of the destruction products. When the fuel has been vaporized and well mixed with air the first type of reaction is most likely to occur. When fuel vapor is suddenly exposed



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to high temperatures before mixing, the second type of reaction prevails. Diesel engine conditions favor the latter type. The liquid fuel drops surrounded by flames form centers of vapor development, the mixing process coming afterwards.

Characteristics of the destructive combustion process are radiant yellow-white flame, tendency to soot when locally over-rich and when chilled. Under over-rich conditions carbon monoxide and hydrogen are formed although to a less extent in the diesel engine than the gasoline engine.

Analysis of the products of incomplete combustion may be a guide towards a better understanding of the diesel process. It has been shown in a practical way that engine design may overcome acrid smell and blue fumes from unburnt fuel by allowing no fuel in liquid state to come in contact with cool walls.

Most drawbacks of the diesel engine come from heterogeneity of the charge, the most obvious one being the impossibility to burn efficiently a quantity of fuel corresponding to the full amount of oxygen available in the cylinder, so that the power output stays behind that of an efficient gasoline engine.

This heterogeneity may be put forward as an excuse for the still existing lack of precise knowledge concerning the diesel process. The knowledge of the gasoline engine's process has developed to a point where quantitive results of general validity can be foretold, but the diesel engine's process allows only an acceptable qualitative analysis.

* * *

Iso-octane from Isobutylene

Simultaneous polymerization and hydrogenation of isobutylene produce iso-octane in catalytic reaction. V. N. Ipatieff and V. I. Komarewsky, Ind. Eng. Chem., Ind. Ed., Aug., 1937.

A mixture of isomeric octanes has been obtained by hydropolymerizing isobutylene in the presence of a solid phosphoric acid-nickel oxide-iron catalyst under hydrogen pressure. About half of the total liquid product was an octane fraction.

A new simultaneous reaction, hydropolymerization of olefinic hydrocarbons, has been found to take place in the presence of mixed catalysts consisting of a combination of polymerizing and hydrogenating agents. This results in the formation of hydrogenated polymers. Particular attention was given phosphoric acid as a catalyst and the most interesting and important hydrocarbon submitted to hydropolymerization was isobutylene.

* * *

Viscosity of Gases

Variation of gas viscosity with pressure is studied for relation to gas flow problems. B. H. Sage and W. M. Lacey, American Institute of Mining and Metallurgical Engineers Technical Publication No. 845.

A study of the effect of pressure upon the viscosity of air, methane, and two natural gases was made to be applied to problems of gas flow such as energy losses in the conduits, as well as through the porous solid materials constituting natural petroleum reservoirs. No previous study appears to have been made of this relation.

Air viscosity was found to increase more rapidly at the lower temperatures. Isotherms intersected at pressures below 500 pounds per square inch. At pressures below this intersection viscosity increases with an increase in temperature at constant pressure but at higher pressures it decreases with an increase in temperature. This is similar to the behavior of most liquids. Pressures up to 2500 pounds or higher were tested, the viscosity for air varying from around 200 micropoises at 150 pounds to 350 micropoises (roughly) at 2000 pounds. Viscosity curves for methane and natural gas were similar in shape to curves for air.

Sufficient data was obtained for the lean natural gas at low pressures to indicate that there was a smaller viscosity-pressure coefficient near atmospheric pressure than at higher pressures. This behavior at low pressures is more nearly in accord with the classical kinetic theory

of gases, which indicates that the viscosity of a gas should be independent of pressure and solely a function of temperature. Variations in viscosity are detailed in the accompanying table.

Viscosity of Gases in Micropoises

Temperature Deg. F.	Pressure, Lb. per Sq. In. Abs. 14.7	250	500	1000	1500	2000	2500	3000
Viscosity of Air								
73.9	182	213	248	297	334	366		
100	189	216	243	286	321	351	376	
160	205	223	243	282	316	344	368	
Viscosity of Methane								
100	116	139	167	211	247	278	306	331
160	126	142	166	207	238	264	286	
220	136	148	165	201	230	257		
Viscosity of Lean Natural Gas								
100	105	139	179	242	288	326	364	398
160	118	143	176	227	266	300	330	356
200	126	154	182	225	258	287	313	336
Viscosity of Rich Natural Gas								
100	105							
160	117	147	183	243	296	341	382	421
200	125	156	186	234	277	316	352	385

A CORRECTION — Woodward, not Blackwood

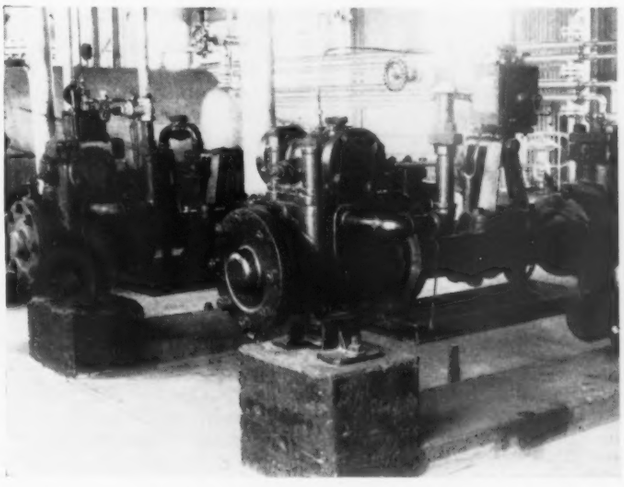
We regret that, in our issue of Sept. 8, 1937, page R-145, last paragraph, an error was made in crediting the source of information on "pH Control In Fighting Corrosion." The information referred to should have been credited to E. R. Woodward, of the Barrett Co. and *not* to E. L. Blackwood, as it was printed.

Mr. Woodward has been writing on this subject for several years, and is well known to the petroleum refining industry in this field. One of his more recent articles appeared in *Chemical and Metallurgical Engineering*, July, 1937.

Removable Drip Pans for Pumps

When Warren Petroleum Co. built its gasoline plant at Galva, Kansas in the summer of 1936, reciprocating pumps were set to handle reflux to stabilizers, fractionators, and rich and lean oil in the absorption plant. In order that the building which houses these pumps may be kept clean and spotless, drip pans were made to be installed beneath the rods and packing glands. The pans were made of light steel, welded after shaping, and fitted with hook bails so they may be easily removed for cleaning. Short rivets were inserted near the upper rim of the pans to which the hook bails were attached to form a hinge to prevent stiffness of action.

In addition to catching drips of condensed steam, oil and gasoline from the packing glands, small funnel-like attachments were welded at one end so the pet cock on the steam end of the pump could be drained into the pan without using piping or hose. The pans were made with sufficient depth that splashing is avoided and will hold sufficient liquid that they need not be removed often.



Removable pans beneath gasoline plant pumps keep the floor clean, at Warren Petroleum Co., Galva, Kan.

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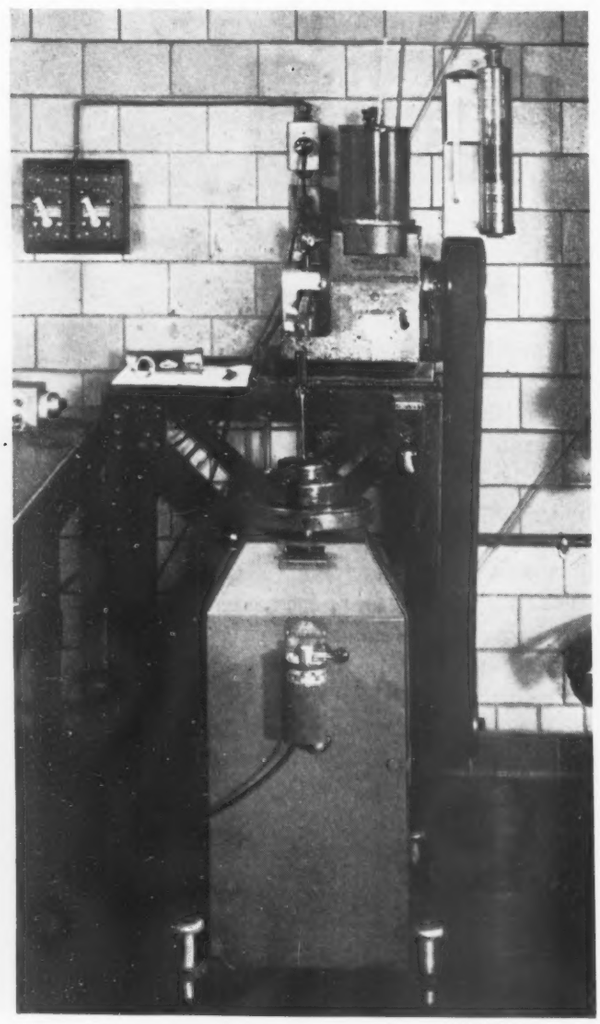
DU PONT

GASOLINE ANTIOXIDANTS

Dearth of Proven Test Methods Worries Grease Manufacturers

METHODS and equipment now used in testing lubricating greases were summarized and their limited variety compared with some of the other petroleum products by Ralph R. Matthews, Battenfeld Grease & Oil Corp., before the National Lubricating Grease Institute at its fifth annual convention in Chicago recently. The need for uniform methods "which could be referred to in proposals for bid and used in checking samples or actual purchases" was emphasized.

At present the Methods of Analysis of Grease (D128-27) and Tentative Method for Penetration of Greases and Petrolatum (D217-33T) are the only tests which have been approved by the American Society for Testing Materials for testing lubricating greases. A method covering dropping points has been published for information and trial, consideration is being given a method for determining consistency of soft lubricating greases, and also an improved method for determining the amount of water in grease is being considered. It is planned to develop laboratory tests for channeling of gear lubricants and their tendency to foam in use. Much of this work is in the hands of Subcommittee IV on grease of Comittee D-2 of the A.S.T.M.



The Timken Lubricant Tester has been revised especially as to application of load and a new method of procedure worked out which gives promise for accurate results. Wear can be determined as well as extreme pressure properties of a grease

Bearing engineers have formed a Bearing Engineer's committee which has developed an apparatus known as the B. E. C. Machine for testing greases on actual bearings. This was necessitated because of the lack of sufficient specifications to define lubricating qualities. However, results have not been completely satisfactory and there is general accord that a machine is badly needed which will really give a complete picture in the laboratory of what may be expected of the lubricant on the road.

The difficulty experienced with prelubricated bearings in storage was one of the problems stressed by H. R. Reynolds, chief engineer, The Fafnir Bearing Co. He said far too many greases will not stand storage. An interest was expressed in a proposed collection of actual field service experiences possible of being gathered by grease manufacturers. This, supplemented by laboratory tests made by the grease manufacturers and not the bearing manufacturers, would be more satisfactory than the present blind selection of a grease from a "flock of samples."

The oil industry will be granted more and more responsibility in the lubrication of hypoid gears in General Motors cars as assurance is given of continued satisfactory lubrication, according to H. C. Mougey, chief chemist, Research Laboratory Division. Starting a year ago with dealer supplied lubricants only, an approved list of tested lubricants was given out for filling stations and garages later in the season.

To get farther away from the sale of lubricants during the coming year, it is desired to include with the present list of 300 approved and tested lubricants specifications describing a satisfactory material, and to leave the responsibility for meeting these specifications to oil companies. Eventually, it is desired to specify hypoid lubricants by a descriptive name or number. A committee of the Society of Automotive Engineers is now working on the problem.

During the past year about half of the hypoid lubricants used for original filling has been a lead soap active sulfur type and the other half has been the lead soap sulfur saponifiable chlorine type. The first has 5% lead soap and 1½% sulfur. The latter contains additional amounts of both chlorine and saponifiable oil. These must also meet certain results in test machines.

The question of mixing various hypoid lubricants was brought out in discussion of the paper in relation to flushing out old lubricant. In this connection Mr. Mougey stated that all lubricants on the General Motors approved list can be mixed safely but if doubt existed as to the type of lubricants previously used, flushing might be the safest procedure. No restrictions were put upon the type of flushing oil used but it was recommended that the gears not be turned during the flushing operation. No let-down in lubricant quality is permissible after run-in nor should the lubricant be used over the recommended 5000-6000 miles although cases of satisfactory use up to 20,000 miles have been observed under favorable circumstances.

O. L. Maag, Timken Roller Bearing Co., singled out

some of the desirable and undesirable properties of various greases in lubricating roller bearings. The addition of fractional percentages of free fats and fatty acids was indicated as proving of advantage in increasing adherence of oil film to bearing surfaces. Some lowering of oxidation resistance was admitted but the compromise was believed to be advantageous.

In relation to the severe service imposed in rolling mill bearings, he stated that the ability to hold a considerable amount of water as an emulsion was at times a desirable feature in as much as it prevented etching on bearing surfaces up to the saturation point. Danger of thinning has been controlled in some instances by the use of mixed base grease, varying percentages of soda soap grease being added to improve emulsifying properties. Another factor to be considered is the frequent wide difference in consistency between worked and unworked greases.

Mr. Maag recommended extreme pressure lubricants for all types of bearings in steel mill heavy duty service. Good results have been observed with lime-lead-soap-sulfur, lime-soap-sulfurized base, and the lead-soap-sulfur-chloride base products as well as those using a chlorinated or phosphorus compound base.

For general use inorganic fillers of an abrasive or corrosive nature should be avoided, he said, except during run-in or to smooth scored surfaces. In automotive wheel bearing use of a high melting point lubricant was found advisable to prevent leakage of melted grease. Grease of the soda soap or mixed lime and a soda soap or aluminum and soda soap have proven best. Use of EP lubricants was not recommended for wheel bearings. A high viscosity index grease was said to be an improvement but not essential and not many oil companies are prepared to supply it.

C. C. Pecu, lubrication engineer, Lackawanna Steel Co., summarized the various types of lubrication used throughout the steel plant and gave his own experiences in an attitude of let the axe fall where it may. Emphasis was placed upon the value of waterproof grease which, he believed, would lead all greases in volume today if available at a fair price. The steel plant can be lubricated with a very few kinds of ordinary grease using extreme pressure lubricants only when and where necessary.

Extreme pressure fluid greases probably will be used to a greater extent, he said, if they can be made to resist water more easily and the EP content can be made more stable. Lower viscosity and higher film strength are features of these lubricants.

In the modern strip mills where oil lubricated bearings are used on the backing up rolls instead of roller bearings, an oil of 2200 viscosity at 100° F. is normally used. An EP fluid grease of 50% lower viscosity and high demulsibility could be used and it would also be more easily filtered.

Consultant's Laboraory Outstanding

LONDON—Very considerable changes have taken place at the "unique" research laboratories of Moore & George, Ltd., at Godstone Road, Whyteleafe, Surrey, in the past three years. The organization has been built up gradually since the end of 1932 until now its scope is such as to be in a class of its own among petroleum consultants in Britain, it is said. The facilities available are normally found only in establishments of major oil companies.

Responsibility for the building up of the research and testing facilities originated with Harold Moore, known in the U. S. as the author of Liquid Fuels. Facilities of the laboratory are described in considerable detail with ilustrations in The Petroleum Times dated Sept. 25.

* * *

Correction

An error appeared in the article by Robert D. Best on Qualities of Diesel Fuels in NATIONAL PETROLEUM NEWS Oct. 6, page R-233, middle of column two. The corrected formula for combustion knock is:

$$\text{Combustion knock} = \frac{\text{E. P. R} \times \text{B. R.}}{10'}$$

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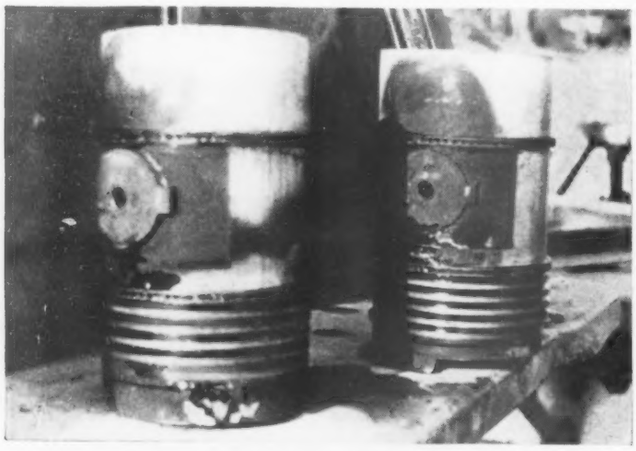

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Burrell Made Vice President Of Liquefied Gas Co.

CLEVELAND, Oct. 15.—The election of Col. G. A. Burrell, well-known gas engineer, to the vice-presidency of Atlantic States Gas Co., Inc., has been announced from the company's offices in New York.

Col. Burrell is known as co-inventor of the Burrell-Oberfell process for extracting gasoline from natural gas by the charcoal process, as the discoverer of the rich helium reserves near Petrolea, Texas, during the World War, and as inventor of the Burrell standard fireman's gas mask.

A prolific writer of technical articles relating to refining processes in the period from 1927 to 1933, particularly 1930-1, for NATIONAL PETROLEUM NEWS, Col. Burrell wrote two series which attracted widespread attention. One of these, relating to natural gasoline technology, was reprinted in booklet form. The other described experiences in Russia where he helped direct modernization of that country's natural gas industry.

More recently Col. Burrell has been devoting a major part of his time to liquefied natural gas. With an associate, B. B. Stroud, he helped form Atlantic States Gas Co. in February, 1936. Since then he has been a director and operating manager. The company supplies liquefied gas to customers beyond the gas mains.

He is also president of the Burrell Technical Supply Co. and the Burrell-Mase Engineering Co., Pittsburgh.

C. M. Larson Promoted to Chief Consulting Engineer

Mr. C. M. Larson, well known technologist with Sinclair Refining Co., New York, has been promoted to the position of chief consulting engineer by that company. His former position was that of supervising engineer. Mr. Larson is a specialist in the technology of lubricants and lubrication, active in the work of the Society of Automotive Engineers and in the Refining Division of the American Petroleum Institute.

International Dictionary of Petroleum Proposed

CLEVELAND, Oct. 15.—A standard dictionary of terms used in the petroleum industry, including German, French, and English translations, was proposed at the Second Petroleum Congress in Paris this past summer and has now been published in draft form. The technical terms cover several types of subjects: units of measure, geology, prospecting, drilling, refining, properties and uses of products, transportation, distribution, and sale. Copies of the dictionary can be borrowed from the American Standards Assn.

New Grease Tester is Shown Grease Manufacturers

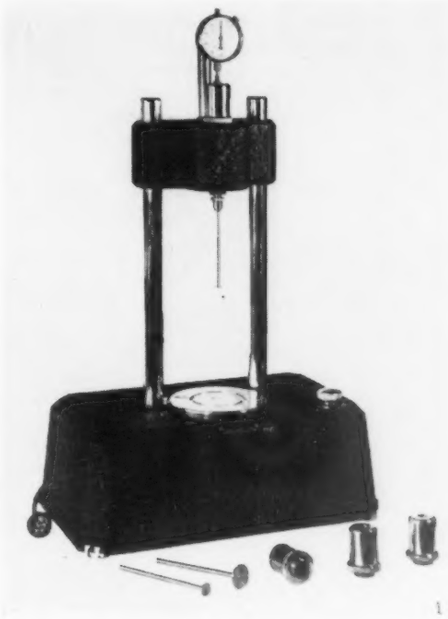
A new consistometer which also measures adhesiveness and other properties of greases, oil and other materials has been developed by Carl L. Knopf, East Chicago, Sinclair Refining Co. The instrument, known as the Consadometer, replaces the old Viscidometer or so-called "spike test" machine. It is a portable apparatus of improved design and greater convenience in use.

Considerable interest was aroused by Knopf when he described and demonstrated the instrument at the Fifth Annual Convention of the National Lubricating Grease Institute at Chicago, Oct. 4-5.

Frequent requests for information on how to build the older instrument or where to get it prompted the development of a new design eliminating the "lab-made" appearance of the original apparatus. Although only two instruments have been built, Precision Scientific Co., Chicago, has been working with Knopf in the design and is prepared to supply them upon relatively short notice.

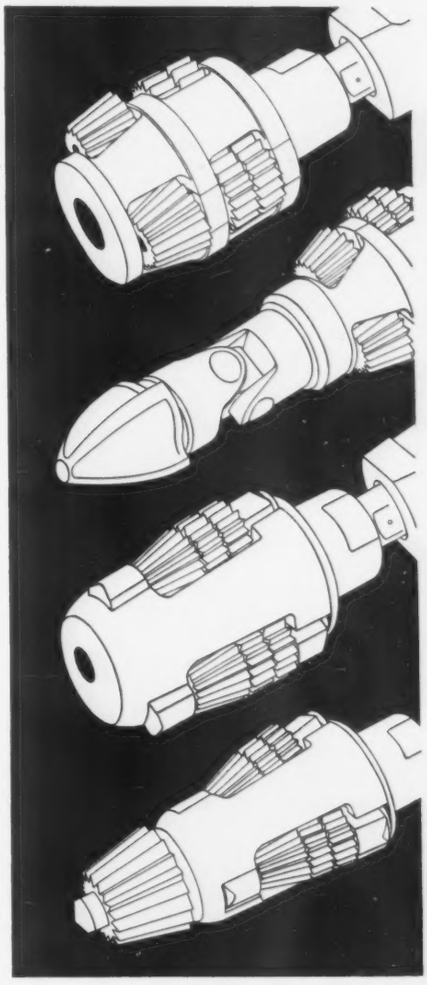
Briefly stated, the instrument measures consistency in force units because consistency is a resistance to deformation, according to Knopf. A "spike-head plunger" is passed through the sample at constant speed, the force being read on a spring scale. Actually the grease sample is raised on a platform by means of a constant-speed motor at a constant rate of 8.9 inches per minute against the fixed plunger. Total up-and-down travel is 4 1/16 inches. The platform is also a turntable and may be rotated at 20.3 rpm. for other types of tests. Various attachments for different tests may be held concentric by a circular groove in the table. The machine may be used with equal accuracy for forces between 25,000 grams and 5 grams, it is said. A. S. T. M. Tentative Method D 217-33T attempts to measure the consistency of a grease by noting the depth to which a metal cone of specified shape and size penetrates the sample during a period of five seconds. Due to the shape of the plunger, penetration depths are said to be greatly influenced by the viscosity of the mineral oil content. Hence, the readings are combinations of viscosity and consistency.

Many laboratories have realized the inadequacy of this method, it is pointed out, and feel that it is of little value except as a control instrument in the manufacture of an established product. One of the greatest faults with this method is said to lie in the fact that the consistencies of two grease samples, or the worked and unworked samples of the same grease, cannot be expressed in a numerical ratio.



The Precision-Knopf Consadometer replaces the viscidometer or so-called "spike-test" machine for testing consistency of grease

AIRETOOL CLEANERS



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Patent Literature OF TODAY

Lubricating oil. No. 2 087 585, *issued July* 20, 1937; *filed Sept.* 11, 1934; *W. J. Sweeney and J. A. Tilton, assignors to Standard-I.G. Co.; no drawings;* 9 *claims.*

Lubricating oil is diluted a naphtha boiling at 400-500° F. and prepared by hydrogenation of a petroleum extract at 900° F. or above. Such an oil is said to have a predilution effect and an extremely low tendency to produce gummy, carbonaceous deposits in an automobile engine. Reason is believed to be the high solvent power exerted by the hydrosolvent naphtha on the oxidation products which are responsible for such engine deposits. Good anti-detonation qualities of the solvent is said also to decrease the anti-knock value of the fuel. Penetrating oils are said also to be benefitted.

* * *

Gum inhibitor. No. 2 087 597, *issued July* 20, 1937; *filed Nov.* 21, 1930; *C. L. Gutzeit, assignor to Standard Oil Development Co.; no drawing;* 2 *claims.*

Gum formation of cracked gasoline is inhibited from gum formation in storage by addition of small quantities of oxazine. The material has a color which is gradually lost during storage with exclusion of light before the inhibiting power has ceased, thus giving an easily observed change in the inhibiting effect. Other similar dyes are indophenols, indamines, eurhodines, safranines and aposafranines, amina azo dyes.

* * *

Oiliness agent. No. 2 087 603, *issued July* 20, 1937; *filed Oct.* 19, 1934; *L. A. Mikeska and C. F. Smith, assignors to Standard Oil Development Co.; no drawing;* 13 *claims.*

A small quantity of an organic addition agent selected from the class of esters and alcohols characterized by an iodine number below 60, and at least 10 carbon atoms in a straight chain, and which has been mildly oxidized by blowing with a gas rich in free oxygen, is added to a lubricating oil to improve oiliness.

* * *

E. P. Lubricant. No. 2 088 193, *issued July* 27, 1937; *filed Feb.* 27, 1935; *W. L. Evers, assignor to Socony-Vacuum Oil Co.; no drawing;* 7 *claims.*

An extreme pressure lubricating composition consists of an oil and a small proportion of a product secured by reacting a mercaptide and an alkali metal salt of a halogen substituted fatty acid to obtain a reaction product of the nature of a salt of a mercapto-acid. This salt is acidified to recover the mercaptan-substituted fatty acid which is reacted with stannic chloride to obtain an active extreme pressure lubricating ingredient. Chlor-substituted fatty acids are preferred.

* * *

Solvent extraction. No. 2 088 441, *issued July* 27, 1937; *filed May* 21, 1936; *P. L. Salzberg, assignor to E. I. duPont de Nemours & Co.; no drawing;* 6 *claims.*

Normally liquid hydrocarbon mixture is treated with furfurylamine ($C_4H_3OCH_2NH_2$) to separate the relatively non-paraffinic compounds from the relatively paraffinic compounds.

* * *

Lubricating oil. No. 2 088 500, *issued July* 27, 1937; *filed April* 20, 1935; *H. I. Waterman, assignor to Shell Development Co.; one drawing;* 5 *claims.*

Low content of aromatic hydrocarbons in mineral oils is accomplished by treating the oil with acetylene in the presence of a polymerization catalyst under conditions to react the acetylene with the aromatic hydrocarbons and to convert at least a portion to compounds of higher molecular weights without changing the constitution of the non-aromatic hydrocarbons. The unreacted non-aromatic hydrocarbons are concentrated by separating the higher molecular weight compounds.

The method enables production of refined smokeless kerosines, high viscosity index lubricating oils, resinous products suitable for paints, and varnishes, and other products.

* * *

Lubricant refining. No. 2 088 616, *issued Aug.* 3, 1937; *filed May* 5, *J. E. Schulze, assignor to Red River Refining Co.;* 1932; 3 *drawings;* 23 *claims.*

High grade lubricants are produced directly by straight overhead distillation under high vacuum. Distillates thus obtained require no acid treatment or filtration.

The process has two principal stages. In the first, a relatively quick separation of lubricating oil components is effected by a continuous procedure which includes rapid heating to vaporize these components under absolute pressure of 50 mm. Hg or lower and condensing them under such low pressure as one or more lubricating oil distillates substantially free of taryr constituents and lighter material.

The small amount of unstabilizing constituents are removed in the second stage comprising a redistillation in which vaporization and condensation is effected at absolute pressures below 25 mm. Hg. and at temperatures increasing gradually.

* * *

Polymerization. No. 2 088 887, *issued Aug.* 3, 1937; *filed Feb.* 29, 1932; *C. R. Wagner, assignor to The Pure Oil Co.; one drawing;* 8 *claims.*

To obtain gasoline from cracking gases produced in other than the low-pressure vapor phase type operation, an absorption process is employed to extract the ethylene, propylene and butylene content, and these gases are then injected into the polymerization system.

* * *

Cracking. No. 2 088 778, *issued Aug.* 3, 1937; *filed Sept.* 8, 1934; *H. Dimmig, assignor to Gasoline Products Co.;* 2 *drawings; one claim.*

To inhibit coke deposition in vapor lines employed for transferring hot cracked vapor products in vapor phase cracking processes, vapors are subjected to a double cooling operation by initially introducing into the hot vapors a vaporizable liquid material to reduce the temperature and by immediately thereafter introducing into the resultant stream of cooled products in the conduit immediately adjacent the point of introduction of the vaporizable liquid medium a heavy oil stock of the nature of reduced crude comprising unvaporizable constituents to further reduce the temperature, but not below a cracking temperature. Products are delivered then to a fractionating zone at a cracking temperature.

* * *

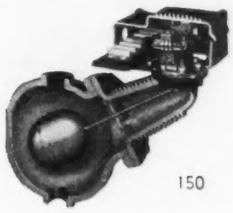
Antiknock gasoline. No. 2 088 997, *Aug.* 3, 1937; *filed April* 13, 1936; *Nicolaas Max, assignor to Shell Development Co.; no drawing;* 2 *claims.*

A small amount (about 0.2%) of the mercuric salt of cobalt carbonyl hydride is incorporated in gasoline.

Activities OF EQUIPMENT MANUFACTURERS

Boiler Control

A boiler control unit No. 150 which is a combination pump control and low water cut-off in one unit has been announced by McDonnell & Miller, Chicago. The two controls have separate operating levels and the differential between the two circuits is adjustable. A flexible metallic bellows



transmits float power to the outside switch mechanism without use of stuffing boxes.

The pump control circuit is designed to turn on and off an electrically driven boiler feed pump in accordance with the requirements of the boiler. At a lower level, a second separate circuit will shut off the oil burner or stoker in case of a fuse failure in the pump circuit.

* * *

Heat Movie

A sound motion picture, "Heat and Its Control", has been produced by Johns-Manville. It is said to make available for the first time an actual visualization of what heat is and the story of its use and methods of conservation.

* * *

Flexible Coupling

Ajax Flexible Coupling Co., Westfield, N. Y., is presenting a collection of data sheets covering its complete line, in bound form.

* * *

Appointed to Sales Staff

Oliver United Filters Inc., New York, Chicago, and San Francisco, announces the appointment of E. C. Faber to its sales engineering staff. Mr. Faber has had many years filtration experience and was formerly associated with Filtration Engineers, Inc.

* * *

Export Manager

Max Hofmann has been appointed export sales manager of the Waukesha Motor Co., succeeding M. E. Nicklin.

An engineer of considerable experience, Mr. Hofmann joined Waukesha in 1926, coming from the Argentine branch of Korting Brothers, German Diesel engine building firm. He has presented numerous papers on Diesel engines, and related subjects before both the A.S.M.E. and the S.A.E.

* * *

Pumps

Bulletin 15 covering liquid and vacuum pumps is announced by Kinney Mfg. Co., Boston. These pumps include the rotating plunger type pumps which are positive displacement pumps with high volumetric efficiency. As all liquid, entrained air and gas is discharged at each revolution, the pumps are said to show unusual performance on the viscous and gassy materials which present difficulties to most types of pumps.

Kinney Heliquad pumps are designed to be unlimited by application, speed, or drive. They have long helical grooves on their circumference starting from the sides and meeting at the center to form long and deep chevron shaped impellers having large liquid volume for small diameter and face width.

Linestarter

Designed primarily to meet the requirements of the petroleum industry and other hazardous applications, the Westinghouse high voltage type DNO linestarters are completely oil immersed and corrosion resisting with high interrupting capacity, it is claimed. These linestarters are available for 2200 or 4600-volt service for starting squirrel-cage and wound rotor induction motors.

* * *

Griscom-Russell Correction

A typographical error occurred in the item published in the Sept. 22 issue, page R-207, new Refining Technology Edition of N.P.N., regarding the new Griscom-Russell finned tube heat transfer apparatus described in a recently released bulletin.

The word "finned" was erroneously printed as "filled". The value of the finned type tubing, according to the manufacturer, is that the fins of various form on the outside of the tubes improve transfer of heat to or from a fluid of low heat conductivity or high viscosity.

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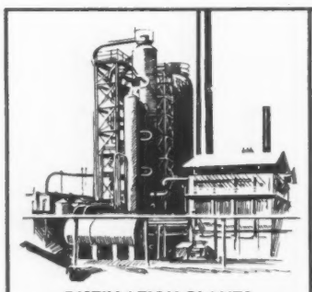
WHERE NORDSTROMS *are profitably used-* IN REFINERIES



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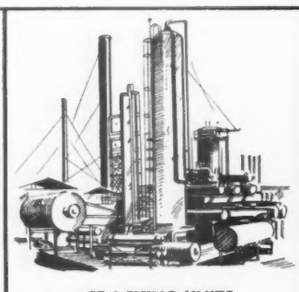

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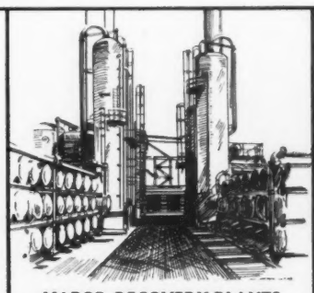

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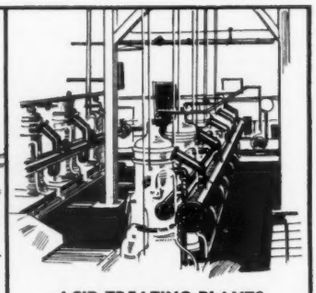

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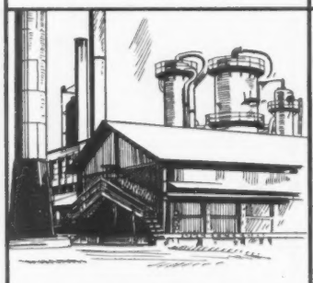
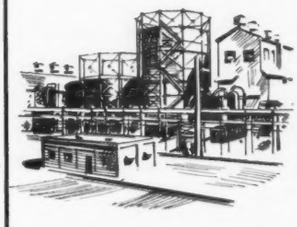


HIGH TEMPERATURE FURNACES

LOADING RACKS



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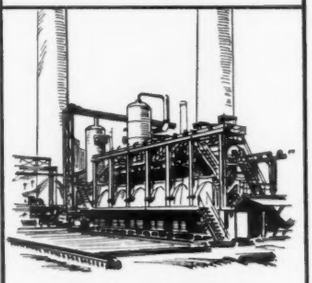

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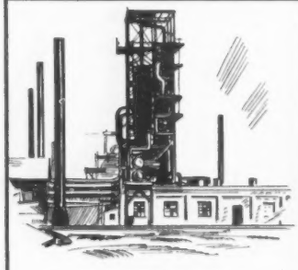

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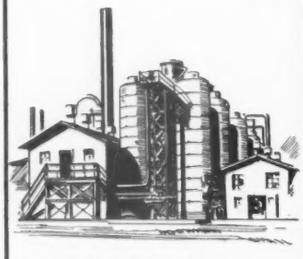

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- Stills
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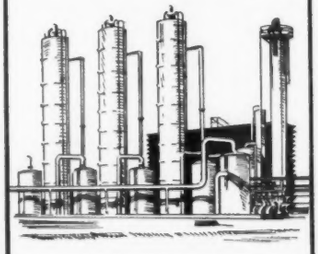
- Stabilizers
- Sludge Lines
- Tanks
- Vacuum Liners



GASOLINE ABSORPTION PLANTS

In the Refining Industries many phases of production are chemical, notably solvent-treating processes, dewaxing and other recently developed processes. Nordstrom Lubricated Valves, by their proven ability to operate in temperature ranges of from —60° +to 600° F. and from low vacuum to working pressures of 3000 lbs., are the accepted standard. Patented "Sealdport" lubrication.

Ask for Bulletin

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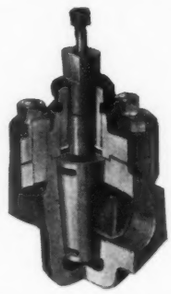
NORDSTROM *Lubricated* PLUG VALVES



Nordstrom Valves are made in alloys for erosive and corrosive chemical services. Metals available include:

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Bronze
Stainless Steel
Nickel-Copper
Chrome-Nickel
Aluminum
Meehanite
Monel, etc.

New Illinois Areas Outlined For Early Testing

By ALFRED H. BELL*

Presented Under the Title "Petroleum Developments in Illinois Since Jan. 1, 1937", at the Fifth Annual Illinois Mineral Industries Conference, Oct. 8-9, Urbana.

DEVELOPMENTS in Illinois during the first nine months of this year are without parallel in importance to the state, since the discovery of the Southeastern Illinois field in 1904. Therefore, a review of developments seems fitting at this time. Certainly five and possibly seven or eight new oil fields have been discovered this year.

The doubt concerning the number arises from the fact that certain wells which found oil in commercial quantity may represent either separate productive areas or extensions of known fields. The number of fields, however, is less significant than is their location, far from previous fields and the consequent large territory which is outlined for early testing.

Events leading up to this year's discoveries began several years ago. Most important, perhaps, was the discovery, in 1928, of the Mt. Pleasant field in the central part of the Michigan basin, a large geosyncline similar in many respects to the Illinois basin. Previously, such basins had been considered unfavorable to the occurrence of oil because it was thought that any oil formerly present had migrated to the margins.

The presence of structural irregularities in the central part of the Michigan basin was demonstrated prior to the discovery of oil, by subsurface data obtained from brine wells. At that time subsurface data in the Illinois basin were insufficient to reveal the details of the subsurface structure. The probability that unknown local structures, some of them favorable to the occurrence of oil and gas, were present in the Illinois basin was recognized by the Survey and an article was prepared and presented before the annual meeting of the Illinois Academy of Science, May, 1930.* This report recommended that the central basin area be explored for oil.

A map, based on geologic data accumulated by the State Geological Survey for many years, prepared by the writer in 1930, divided the state into areas according to the relative probability of finding new oil fields. Although this map was not printed at the time, it was exhibited in Chicago by the Western Society of Engineers in September, 1930, along with other material illustrating the work of the State Geological Survey. A copy of this map, to which have been added recent discoveries is shown in Fig. 1. It will be noted that all of these have been within area Number 1, which is designated as having "best possibilities", in the earlier edition.

Actual demonstration of the presence of structural irregularities in the Illinois basin has been made by both geological and geophysical methods. Studies of Pennsylvanian stratigraphy initiated in 1927 under the supervision of Dr. J. M. Weller, of the Survey staff, made possible correlations over wide areas of the state with a precision hitherto believed impossible. These studies were carried into the basin area and demonstrated the presence of structures favorable to the occurrence of oil. The results of these studies in one area were published March 1, 1936.†

The reflection seismograph method of exploration was started in Illinois by the Pure Oil Co. in the fall of 1935. Geophysical investigations by this company resulted in the discovery of an important structure in the central part of the basin. The seismograph method has since been

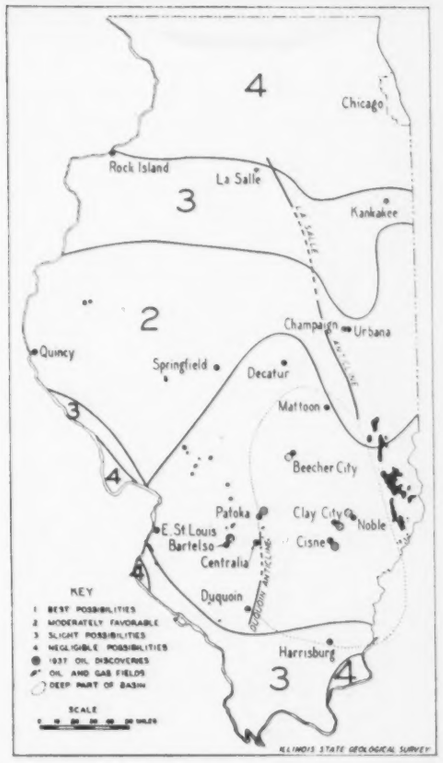


Fig. 1. Map prepared in 1930 by the author, dividing Illinois into areas according to the relative probability of finding new oil fields there. Recent discoveries have been marked on the map, all these being in Area No. 1, designated in the earlier edition as having "best possibilities"

*Geologist and head of the Oil and Gas Division, Illinois State Geological Survey.

*Bell, A. H., "The Relation of Geology to the Development of the Petroleum Industry in Illinois." Trans. Ill. Acad. Sci. Vol. 23, No. 3, March, 1931, pp. 367-370.

†Weller, J. Marvin, and Bell, Alfred H., "Geology and Oil and Gas Possibilities of Parts of Marion and Clay Counties with Discussion of the Central Portion of the Illinois Basin," Illinois State Geological Survey Report of Investigations No. 40, 1936.

TABLE 1

Discovery Wells in New Southern Illinois Oil Fields

Field	County	Company	Completed	Well No.	Location Sec. Tp. R.	Total Depth (feet)	Depth (feet)	Producing Formation
Bartelso	Clinton	Bartelso Oil & Gas Co.	April 20, '36	1	8-1N-3W	1037	1027	Carlyle
Patoka	Marion	Adams Oil & Gas Co.	Jan. 27, '37	1	21-4N-1E	1418	1391	Benoist
Clay City	Clay	Pure Oil Co.	Feb. 26, '37	1	33-3N-8E	2613	2608	Cypress
Clay City	Clay	Pure Oil Co.	May 15, '37	1	33-3N-8E	2960	2950	McClosky
Cisne	Wayne	Pure Oil Co.	March 4, '37	1	26-1N-7S	2987	2962	Ste. Genevieve
Noble	Richland	Ohio Oil Co.	Aug. 2, '37	1	8-3N-9E	2990	2896	McClosky
Noble	Richland	Mammoth Oil Refg. Co.	Sept. 2, '37	1	34-4N-9E	3009	2972	McClosky
Beecher City	Fayette	Carter Oil Co.	Sept. '37	1	12-8N-3E	1607	1601	Benoist

adopted on a large scale by oil companies in the area and at present about 16 parties are operating. It is noteworthy that the first three wells located by the seismograph in Illinois all discovered oil.

The discovery wells of the first three fields of 1937 were already being drilled in late 1936. Two of these were drilled by cable tools and one by rotary. This was the first rotary test for oil to be drilled in Illinois. The accompanying Table No. 1 shows the discovery wells of new fields in chronological order.

Geological Conditions in the New Basin Fields

Well data from the basin area are beginning to reveal something of the subsurface geological conditions governing accumulation of the oil. It is already evident that anticlinal structure is not the only factor of importance and in some cases it may not even be essential. The principal producing horizon in these fields is the "McClosky sand", defined as any oolitic beds occurring in the Fredonia limestone member of the Ste. Genevieve formation. The typical McClosky in all of the best producing wells so far obtained is a light gray pure limestone made up of exceedingly well sorted oolites.

There has been very little deposition of interstitial material, so that porosity, in some cases, may approach the theoretical maximum for closely packed uniform spheres. The thickness of the pay is variable within short distances, as well as its position in the stratigraphic section. Because of the lenticular character of the reservoirs, production may be looked for well down on the flanks of structures, as well as dry holes on the high parts, in some cases offsetting good producers. It is planned that further discussion of these conditions with cross sections showing specific locations, will be included in an early publication of the Survey.

TABLE 2
Wells in New Illinois Fields, Sept. 25, 1937

	Producers	Dry Holes*	Drilling	Rig
Noble field	7	2	8	1
Clay City	35	3	11	4
Cisne	3	1	0	0
Total central basin fields	45	6	19	5
Patoka	56	13	5	20
Bartelso	16	3	1	1
Total	117	22	25	26

*Within a quarter-mile of production.

Structure of the Basin

A sufficient number of datum points on the contact between the overlying Chester series and the top of the Lower Mississippian series are now available to permit making a generalized regional contour map of the basin on this horizon. Maps of the basin contoured on the base of the Pennsylvanian have been published previously.

Probable Recovery in New Fields

Data are as yet insufficient to make a reliable estimate of ultimate per acre yield in the new fields. The best indication now available is a comparison of the thickness and character of the reservoir rock with that of the same strata in the old producing field. Thus, the McClosky oolites in the new basin fields are more uniform, and well sorted, than are those in the Lawrence County field, judging from the few samples available from the old field. The average thickness of "pay" is probably greater in the new fields. Therefore, an ultimate yield per acre at least as great as in the old field may be expected.

In the largest area of continuous McClosky production, in Dennison township, Lawrence County, 23,270,165 barrels of oil were produced in 23 years (1908-1931) from an area of 1455 acres, or a yield of 16,000 barrels per acre. The wells were open in the Kirkwood and Tracey sands as well as the McClosky and separate figures on the recovery from each sand are not available. In this area, however, it is known that the McClosky was by far the most productive horizon, and probably has yielded an average of 12,000 barrels per acre out of the 16,000 barrels per acre total. Some individual leases yield as much as 25,000 barrels per acre mostly from the McClosky. In view of this record, ultimate yields of 5000 to 10,000 barrels per acre from the new basin fields from the McClosky are not improbable.

TABLE 3
Production of Crude in Illinois for Nine Months of 1937
(Figures in Barrels)

January	368,000
February	343,000
March	410,000
April	386,000
May	416,000
June	463,000
July	530,000
August	*667,000
September	*818,000
Total	4,401,000

*August and September estimated by Illinois Geological Survey.

Drilling Activity and New Production

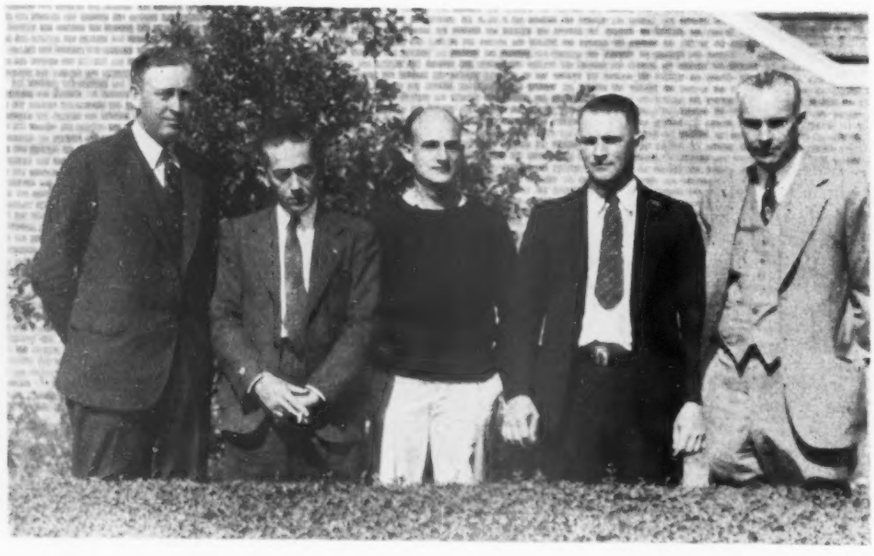
At the end of September, 1937, there were approximately 111 oil and gas drilling operations in Illinois, almost a threefold increase since the beginning of the year. From January to Sept. 30, approximately 257 wells were completed in the state, of which 169 were oil producers.

The number of wells in the new fields are shown in an accompanying Table No. 2.

Production in the new fields alone is considerably greater than the previous total production of the state. This is illustrated in an accompanying Table No. 3 of production by months for 1937. It will be noted that the production for September is estimated to be well over twice that for January. Further increases in production in the known fields are to be expected during the remainder of the year, and it seems probable that additional fields will be discovered.

The Survey does not as yet have anything like complete data on the wells so far drilled. Because of the importance to the industry of assembling, correlating, and thoroughly studying these data, so that conclusions of both scientific and practical value may be reached, we earnestly request the co-operation of all in filing the drillers' logs, and in making available the well cuttings and cores to the Survey for study and preservation.

Directors of Virginia Oil Mens Ass'n.



Directors of the Virginia Oil Men's Assn. at their annual fall gathering Oct. 7 and 8 at Old Point Comfort. Left to right, B. L. Ray, Standard Oil Co. of New Jersey, Richmond, president; E. J. Schul, Virginia Home Oil Co., Norfolk, immediate past president; C. R. Davis (dressed for an afternoon's golf), Cities Service, Richmond; McC. C. Higgins, Higgins Oil Co., Galax, Va., and A. L. Tenser, Richmond, secretary

Shell Transfers Loudon

J. H. Loudon, assistant to vice president J. U. Stair, of Shell Oil Co.'s Los Angeles office, has been transferred to the Hague, Holland, where he will be assigned to one of the companies forming the Royal Dutch Shell Group.

Mr. Loudon has been located on the west coast for fifteen months, coming here from previous assignments in Venezuela, New York and in Texas with the Shell organization.

☆ ☆ ☆ Facts about Furfural and the Furfural Process ☆ ☆

Furfural is a highly effective refining solvent, yet relatively low in cost. The commercial supply is adequate. It is non-poisonous, stable and easily recovered.

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More than one station has discovered the wisdom of displaying its merchandise in an open cabinet where customers may pick out and handle the items. The winter accessory display, as in the case of this one in the sales room of a Doyle Gasoline & Oil Co. station at Rochester, N. Y., need not be large but it should be neat

"If You Don't See It, We Haven't Got It"—

Display Has a Large Part in Determining Success of the Station in Developing Profitable Winter Conditioning Business

By JOHN W. THOMPSON
N. P. N. Staff Writer

• • •

THE service station operator has no difficulty in determining when the winter season is approaching. His daily mail brings him bulletins, folders, letters and broadsides, all from a great variety of accessory and supply manufacturers, informing him of the coming cold weather and the profit possibilities in certain types of winter accessories.

About this time of year, the supplying oil company begins to feed the station operator with literature, sales plans, and display suggestions which will help the dealer "cash in" on this profitable winter conditioning business.

Then, too, about every fourth car that turns in the dealer's drive these days brings an accessory salesman, bent on loading up the station with some gadget that is "just the thing and will go like hotcakes during the winter season".

The winter, probably more than any other season, does offer an unusual sales opportunity for service stations. The products and services which it can offer are wide in scope, both from a standpoint of necessity and convenience.

Unfortunately, too many station operators "miss the boat" on winter selling, and in a number of cases they do not know the reason. They have good stocks of a wide variety of winter merchandise, and they even put up the little poster, reading "Prepare Your Car For Winter Driving", which their supplying company has sent them. But in too many cases the winter profits don't jell. Why?

If you are a station operator or have anything to do with the supervision or management of service stations, and if you have never acquired the hobby of taking frequent strolls through the aisles of your local Five and Ten store, by all means begin right now. For in the Five and Ten you can find one of the first fundamental lessons in selling your winter conditioning items and services.

There is no hidden merchandise in the Five and Ten. As a clerk in one of these stores once remarked, "If you don't see it, we ain't got it". What better rule could be followed in selling winter conditioning services and accessories.

If you want to make a profit on this class of business, you've got to do more than just stock up your station and hang up a "Prepare Your Car For Winter Driving" sign. Show your merchandise. Display it. When you can't show it, as in the case of service, talk about it and put up a sign telling the unusual features of your winter conditioning service. Don't just say "Lubricate Your Car For Winter". Every other station is doing the same thing. Do yours differently. Feature vacuum cleaning, for example, or point out how your lubrication service includes the checking of the underneath parts of the car for defective parts. If you own one of those lift attachments which raise the weight of the body off the shackles to more thoroughly lubricate the car, let the motorists know that you have it and see that they know what it accomplishes.

When the lift isn't in use, take off the lift jack, place it on a little dolly truck with an informative sign on it, and wheel it out near the drive where it can be seen. Tell customers about the more thorough job it does.

The same thing can be done with other merchandise. The principal thing to remember is that a prospect wants to see what he is going to buy before he buys

Dubbscracked gasoline

Knoxless and Pullsmore

And it Goesmore

But it doesn't Costmore

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

A FEW OF THE PROFIT ITEMS IN WINTER CONDITIONING SERVICE

Winter motor oil
Winter gear oil
Winter chassis lubrication
Wheel bearing lubrication
Anti-freeze
Radiator hose
Radiator cleaner
Radiator seal and solder
Oil filter
Fan belt
Battery
Battery cables
Ignition cables
Spark plugs
Spark plug cleaning
Light bulbs
Fuses
Tires
Tubes
Tire valves and cores
Tire chains
Windshield wiper parts
Heaters
Top dressing
Touch-up paint
Polish
Wax
Polishing cloths
Windshield defrosters
Defroster fans
Winter fronts
Grill guards
Hydrometers
Fog lights
Blankets
Flash lights
Tow ropes

it. And very often he doesn't know he wants to buy it until he sees it. In other words, merely seeing an article sometimes creates a desire for that article.

In selling winter conditioning, the station operator should not lose sight of the influence of the car manufacturer in developing lubrication business at this time of year. The car owner does not have to take the station attendant's word for it, because the company that made the car recommends that the engine oil, as well as lubricants for the transmission, rear axle, and steering gear be changed with the change of season.

Owners of cars equipped with hypoid rear axles should be particularly cautioned to have the axle lubricant drained, flushed and refilled at this time of year, as practically all car manufacturers specify. While in most cases the same grade of hypoid lubricant is specified for all year 'round, car makers recommend that these axles be drained twice a year, spring and fall.

Winter Profit Figures

One large oil company, with a national distribution of all automotive petroleum products, in sizing up the winter conditioning market, estimates that, between now and Christmas, the dealer could make an approximate PROFIT of $11.93 on each customer he services, not including the accessory profits.

Six winter necessities are listed for "required" servicing: transmission and differential drain; front wheel lubrication; crankcase drain, flush and refill; radiator clean and flush; anti-freeze; and chassis lubrication.

Using Fords, Chevrolets and Plymouths as a basis for figuring, this oil company shows that the above services will net the station operator approximately $4.18, with a cost to the motorist of between $6.35 and $9.00.

While these three popular cars represent the majority of the cars on the road, the larger cars will bring larger profits. Profits from these "necessity" winter services are said by this company to range from $3.85 to $4.50, depending upon the kind of motor oil and anti-freeze used, making the average gross profit $4.18.

It is then pointed out by this oil company, in its discussion of winter conditioning profits, that the month following the initial winter servicing work the customer will again need a crankcase drain, flush and refill and a chassis lubrication job, bringing the station operator an additional gross profit of $1.55. The next month the same process will be repeated, and by Christmas time this will swell the station's gross profit on essential winter services to approximately $7.28 per car.

In addition, according to this oil company, national figures show that, during these remaining pre-Christmas months, the average motorist will buy 155 gallons of gasoline, which, for example, at 3 cents per gallon, brings an additional profit of $4.65 to boost the total gross profit to $11.93 per customer. From this point, a pencil and paper and some simple multiplication will show you what potential business is coming into your station on a basis of 50, 100, or 500 cars.

But these profits are only one step in the program of successful winter selling. The Pennzoil Co., in one of its current sales bulletins, aptly presents the opportunity which a lubrication department offers in selling winter driving needs. Quoting from this bulletin:

"Let's contrast our business with that of Bill Jones, who runs a haberdashery store down the street. You walk into Bill's place to buy a tie. After your selection has been made and Bill is busy wrapping it up, he says, 'Say Joe, how about a shirt?' Immediately your mind travels back to the bureau drawer at home. You visualize the neatly folded shirts which are piled up there and you decide whether or not to buy.

"Perhaps Bill will ask, 'And how are you fixed for socks?' Your mind travels back home again. You look into the drawer and mentally size up the sock situation. Then you make another decision — whether or not to buy. And so it goes. In each case when Bill makes a suggestion, the best he can do is to wait for your decision after your mind has traveled to the bureau drawer and back to his store.

"Now what happens in the lubrication department? Your customer drives his car onto the hoist and leaves it with you for a period of time. He does this often — from eight to 12 times a year. And each time that he brings his car in, figuratively speaking, he places his automotive "bureau" at your disposal. All you have to do is to pull open the 'drawers', one by one, and inspect each piece of the car's 'apparel'. Wheel bearings, transmission, differential, fan belts, spark plugs, and a hundred other things are waiting there for your inspection.

"Wouldn't Bill in the haberdashery store just be tickled to death to have you come walking into his store pushing your bureau or wardrobe in front of you? You bet your life he would. And so you see, after we get over the fence the grass is just as green in our own pasture as we thought it was in the one next door.

"The lubrication department is a 'feeder' department. This service is rendered more often than any other. By keeping your eyes open — by looking for the things that the customer needs —you'll do both yourself and your patron a favor. And the moral of the whole story is, if you don't watch for these things somebody else will. Statistics show that the average motorist spends over $200 each year for gasoline, lubrication, accessories, and miscellaneous automotive services."

The point to be made here, of course, is the opportunity which the lubritorium offers to sell winter accessories to motorists. The motorist who rushes into the station to buy gasoline is in a hurry. He is in no mood to stop and talk about a new heater or a new set of tires. But get him to take the time for a lubrication job and he slows down his hurried pace for 20 or 30 minutes. Then he has time to look around your station at the display of merchandise, and you have time to talk to him about winter accessories as well as to sell him on the need for a complete servicing of the car for winter.

The oil company, previously quoted in this article, which showed the profit possibilities in winter conditioning, carries its illustration further into some of the important winter accessories. For example, it is shown that, on the three low priced cars as a basis, the sale of six necessary winter accessories will

(*Continued on page* 31)

Fluctuation in Winter Temperatures

(U. S. Weather Bureau Reports in these typical cities)

City	1936-37 High	Low	Range	1935-36 High	Low	Range
Atlanta	83	20	63	86	5	81
Baltimore	81	15	66	82	0	82
Boston	79	10	69	78	3	75
Buffalo	76	6	70	76	-3	79
Chicago	81	1	80	83	-17	100
Cleveland	77	11	66	78	-10	88
Dallas	88	19	69	88	10	78
Denver	84	-12	96	81	-25	106
Indianapolis	80	4	76	84	-18	102
Jacksonville	88	30	58	88	23	65
Kansas City	84	1	83	85	-8	93
Louisville	79	13	66	86	-11	97
Minneapolis	75	18	93	75	-34	109
Moorh'd, Minn.	93	-33	126	75	-48	123
New Orleans	89	36	53	87	28	59
New York	75	12	63	76	-2	78
Pittsburgh	74	10	64	81	-16	97
Portland, Ore.	88	14	74	81	14	67
Salt Lake City	82	-11	93	85	2	83

The great changes in winter temperatures, as shown in this weather bureau report in typical cities, indicate the widely varied operating conditions under which a car must operate during the winter season and the compulsory need for having cars serviced to meet most any temperature emergency

Tips on Getting Station Ready for Winter

Customers Won't Wait For Winter Changeover

The motorist customer for seasonal oil and grease changes and anti-freeze for his radiator, and so on, at the start of winter, differs from the spring changeover customer in that he won't wait, once he feels the need of winter conditioning his car.

When that day arrives that he feels his car may suffer if he delays longer in winter conditioning, or if he is going out of town and doesn't dare wait until he returns,—that day he is going to do his buying of that nature. If his regular station isn't ready to take care of him, that customer will go down the street to some station that is prepared to meet his needs.

On this page is a list of points to check in making sure the station is set for the profitable winter conditioning business. It was prepared for National Petroleum News by a station operator who has been successful in selling winter services. Check it against points that otherwise might be overlooked.

I—Merchandise

A—Gasoline

Watch daily sales through the autumn months with an eye towards changes in buying habits of customers. That is, increases in Ethyl sales or decreases in total sales that might necessitate changes in normal inventory.

B—Motor Oil

1—Put in complete line of 10W and 20W lines.

2—Make suitable arrangements for inside storage during bad weather.

3—Dispose of soiled or damaged containers.

4—Rearrange bulk storage tanks and mark winter grades with "decals."

C—Tires

1—Plan for inside storage of tires which were kept outside in summer weather.

2—Dispose of or re-wrap soiled or sun-faded stock.

D—Batteries

1—Check charging rack and make ship-shape for increased recharging business.

2—Check for adequate supply of rental batteries.

3—Increase stock of new batteries.

4—Prepare for winter storage of all batteries where they will be protected against freezing.

E—Accessories

1—Add as complete a line of "winter items" as normal seasonal demand would indicate necessary.

2—Arrange for inside storage of accessory merchandise. Make displays where possible.

F—Lubricants

1—Store left-over summer greases in an out-of-the-way place.

2—Stock up on winter grades.

a—Gear oil No. 80 and No. 90.

b—Gear oil No. 90 Extreme Pressure.

c—Hypoid Lubricant Winter.

d—Winter weight fiber, wheel bearing, and chassis lubricants.

II—Sales

A—Gasoline

1—Tie-in driveway solicitations with oil company's advertising.

2—Display signs and banners supplied by the oil company announcing change to winter specifications.

3—Prepare to "push" Ethyl as normal customer sales resistance declines.

B—Motor Oils

1—Train all helpers to give the "winter oil" story. Teach them why winter oil is imperative.

2—Plan possible advertising program to capitalize on the *need* for winter oils.

3—Plan winter oils displays.

C—Tires and Batteries

1—Revamp summer sales talks, making paramount the *danger* and *inconvenience* encountered in driving in cold and slippery weather.

2—Plan winter displays and advertising on same basis.

D—Accessories

1—Establish definite policies as to type and quantity of "winter" merchandise needed.

2—Plan driveway sales procedure for helpers in selling winter accessory merchandise.

3—Instruct inexperienced men in complete servicing of radiators for cold weather.

E—Lubrication

1—Give positive instruction to all helpers that charts be consulted on *all* transmission and differential drains to avoid mix-ups on hypoid gear situation. Review hypoid warnings.

2—Plan advertising program.

"If You Don't See It"

(*Continued from page* 30)

bring the station operator an approximate gross profit of $5.31, increasing the potential winter profit per car to $17.24. These six items include: spark plugs, oil filters, top dressing, tire chains, fan belts, and wiper blades.

However, this is only a partial list of "must" winter accessory items that will enjoy a wide sale through station outlets this season. Among others are batteries, tires and tubes, light bulbs, radiator hose, windshield defrosters, and heaters.

A natural sales argument, due to the winter season, is offered for the sale of tires and electrical equipment. The advantage of a set of new tires in winter driving is two-fold. First, the fresh, deep treads grip the snow and minimize the danger of skidding, and second, while the car owner is enjoying the added protection of new tires, he should be made aware of the fact that the wear on tires is not nearly as severe in winter as it is in summer. Consequently, new tires bought at the beginning of the winter season are still relatively new when spring rolls around, and the motorist has had the added protection in the meantime.

Because of the demand of motorists that their cars start quickly and without difficulty in winter, station operators find a good market for electrical equipment accessories. Batteries, for this reason, will enjoy a wide sale this winter. Similarly, spark plugs, spark plug cables, and battery cables are sure to be in great demand.

Recent years have shown large and small oil companies to be increasingly interested in the natural ability of King Winter to bring business into their stations. More and more now these companies are going out to meet the approaching profit season half way, as is evidenced by the increase in number of winter conditioning promotion campaigns among oil companies.

Some car manufacturers have found that new car owners are particularly susceptible to winter accessories of a convenience nature, such as heaters, defrosters, radios, sun visors, and extra tail and fender lights.

In a survey made a year ago Chevrolet found that owners of cars from one to three years old are excellent prospects for such items as fender markers, horns, fog lights, ornamental markers, and additional lights. This survey also revealed that the car dealers found a much more ready sale for accessory merchandise when it was displayed on open tables where it could be seen and handled.

With the automobile industry now completing what is confidently expected to be a 5,000,000-car year, the largest since 1929 and the second time in its history it will have passed that mark, there is ample indication that winter servicing will continue to be a profitable operation of major proportions. The service stations in this country, because of their very obligation to keep cars in proper operating condition, and because of their frequent contact with motorists, stand directly in the path of more and more winter business. Whether the motorist detours around a station in his search for winter services, or whether he drives in, will depend largely upon the method and merchandise used to "invite him in".

Bakelite Resin Coating DEFIES CORROSION *in gruelling 2-year test*

IN an unusually severe service test recently completed by H. A. Smith Pump & Motor Co., a Bakelite Resin formulation was the only coating among many types tested, that completely prevented corrosion of the steel surface to which it was applied.

This rigorous test consisted of placing panels, coated on one side only, in small, standing, out-door tanks. For two years, each panel was exposed, in continuous alternation, to: gasoline, for one week; hot sea water, one week; moist air, one week.

Illustrations show both sides of panel after two years. The uncoated side is rusted to the flaking point. The other side, coated with Bakelite Resin finish, showed no sign of corrosion, excepting at unprotected edges. This finish still retains its lustre and transparency. Through it, clean bright metal may be seen.

Panel after 2-year test in gasoline, hot sea water, moist air. (*Left*) side coated with Bakelite Resin finish. (*Right*) uncoated side.

This is one of many formulas developed by Bakelite Research Laboratories. Finishes fortified with Bakelite Resins are solving numerous painting problems. Write for detailed booklet **29S**, "Bakelite Synthetic Resins".

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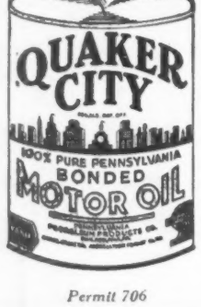
DISTRIBUTORS WANTED! — QUAKER CITY OIL

Since 1919



Low prices for 10 and 20W Penna. Oils

QUAKER CITY Penna. oil is building a profitable business for quality oil distributors. Quotations for 10 W and 20 W grades lower than prevailing differential... Available in one quart cans and drums.

Write for prices.

PENNSYLVANIA PETROLEUM PRODUCTS CO.
1625-27 South Water St. Philadelphia, Penn.
Dep't J.

Permit 706

3—Tie-in with company sales "push" on winterizing.

F—General Sales

Service station merchandise and services are in the spot-light before and during cold weather. A normal increase is due every operator in the sale of winter items but the smart operator through *planned* sales effort can easily realize on more than his average share.

III General Maintenance

A—Outside

1—Make pumps ship-shape.
2—Check fill pipes for worn gaskets and stripped threads.
3—Be sure supplies are available and check condition of snow shovel, ice scraper, rock salt supply, etc.
4—Put gravel drives in order for sloppy weather.
5—Arrange for fuel storage.
6—Cover lawn utensils with coat of grease, and store.
7—Arrange for radiator service in freezing weather.
8—Do any needed painting or repairing.
9—Arrange for disposal of ashes.
10—Have slop oil storage tanks pumped dry.
11—Drain condensed moisture from compressor and air lines.
12—Check all lamp bulbs.
13—Clean all signs.

B—Inside

1—Weather strip doors and windows where necessary.
2—Check all stationary equipment such as grease guns, hoists, compressors, oil dispensers, switchboards and the like.
3—Clean out flues and install stoves.
4—Clean out water traps and pipes.
5—In storing merchandise and supplies bear in mind that windows will require more frequent cleaning and keep them as free as possible from obstructions.
6—Check special winter equipment such as hydrometers, flashlights, alcohol pumps, thermometers, radiator service tools, grease dispensers, materials for thawing frozen radiators, etc.

C—General

Winter weather results in a need for increasing the amount of time spent in maintenance. New schedules should be drawn up so that this extra work is divided among the men and every effort made to avoid slighting maintenance duties.

IV—Service

A—Personal Appearance

Arrangements should be made to take care of winter weight uniforms, adequate under clothing, gloves, etc. In wet weather care must be taken that uniforms are cleaned and pressed oftener and that shoes and puttees are kept shined.

B—Service Routine

1—On the drive

Extra pressure must be brought on helpers to insure that service as a whole does not decline in cold weather. Radiators must be tested, water added, windshields cleaned and motor oil checked in spite of

cold or rain if service is to be maintained.

2—In the Station

Special arrangements are necessary for the customer's comfort during cold weather. A place near the stove, the usual rest room facilities, and hot water where possible. All these and more must be planned for in advance. There will be little time when the rush starts for details.

Plan Campaigns, Review Record At Sales Meetings

MONTHLY sales meetings of service station employes of the Perkins Oil Co., Rockford, Ill., are to plan sales effort for the coming month as well as to review sales records of the previous month.

Two stations are operated by the company. One is in the north end of Rockford, the other on the near east side. The company also has several dealer accounts and some consumer tankwagon business out of the bulk plant.

Joint sales meetings of operators at the two stations are held some months when the problems under consideration are mutual. Other meetings are held separately, when the sales problems are individual to the stations.

While company officials desire a good volume of sales in all items—gasoline, lubrication, motor oil, car washing, tires, batteries and accessories—sales peculiarities of each station are recognized. For instance, the north side station is the leader in car washing, and there is little competition in that part of Rockford. On the other hand, the east side station has indicated a trend towards a large lubrication business.

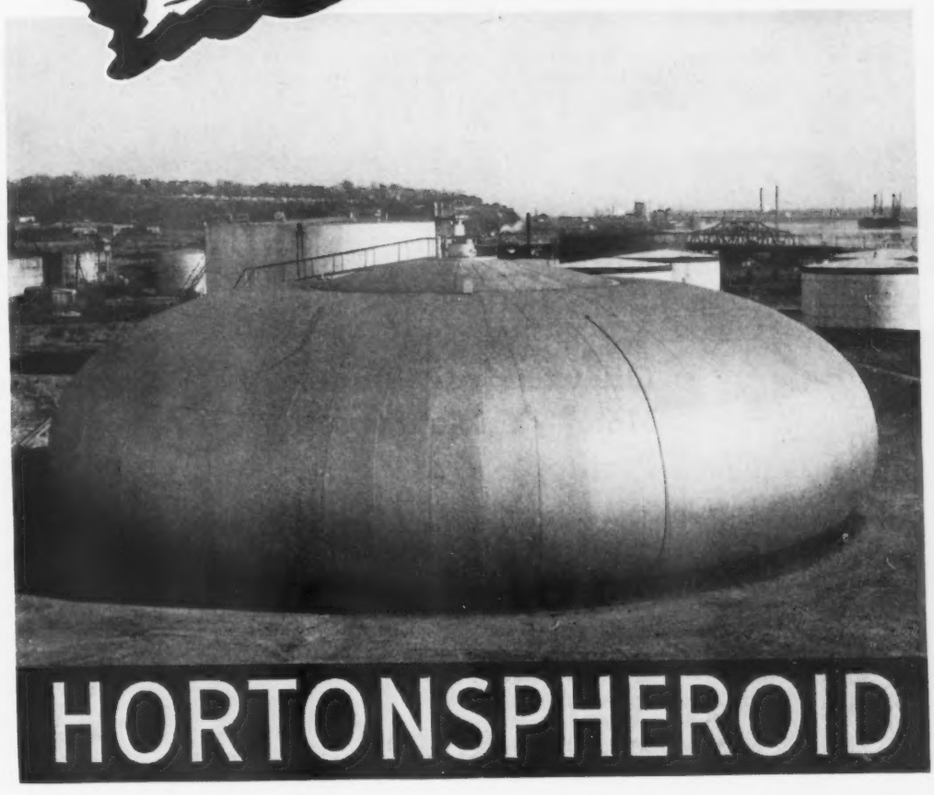
For a small retail operation the company has found personal calls, in person or on the telephone, the most efficient means of advertising. When the company was younger the partners, R. H. "Si" Perkins and Cliff H. Fry, did some cold canvass work in the stations' neighborhoods. Now a considerable file on lubrication customers has been built and calls are mainly follow-ups on these customers.

The company also issues two direct mail pieces each year. One is in the spring, the other in the autumn, personal letters listing needed services on seasonal change-overs.

Another marketing idea of the company that has developed considerable business is solicitation of business from salesmen of supplying companies. Once a year the company sends a letter to headquarters of all firms from which it purchases equipment or resale merchandise. These letters are passed on to salesmen in the Rockford territory. Usually the salesman calls at the station on the next trip to Rockford, and some of these letters have produced permanent customers.

STOP THIS LOSS* with the

an octane value of 70. This fuel probably carried a much higher value as it left the refinery but lost some of the original octane value in storage. The most substantial raise



HORTONSPHEROID

THE Hortonspheroid (noded type) is particularly well suited for storing new high test motor fuels in large quantities at 2½ lbs. pressure. With gasoline held under this pressure, you not only protect yourself against loss of octane value but also stop volumetric loss by evaporation.

The Hortonspheroid has proved itself to be a highly practical unit. Installations are being made in rapidly increasing numbers in all parts of the world. From a cost standpoint, the unique design results in a most favorable balance of economy with capacity. Units for handling motor fuels are available in standard sizes ranging from 10,000 to 100,000 barrels or more. Where smaller capacity or higher pressure is desired, as in handling natural gasoline, the plain type Hortonspheroid is available in standard sizes from 2,500 to 30,000 bbl. For complete information, address our nearest office.

*The clipping reprint above is from a report of a recent survey made to determine quality of gasoline sold at various filling stations.

Chicago Bridge & Iron Company

Cleveland....2206 Rockefeller Bldg.
Chicago....2125 Old Colony Bldg.
New York....3345—165 Broadway Bldg.
Philadelphia....1614—1700 Walnut Street Bldg.
Boston....1516 Consolidated Gas Bldg.
Detroit....1513 Lafayette Bldg.
Dallas....1439 Liberty Bank Bldg.
Birmingham....1534 N. Fiftieth Street
Houston....2919 Main Street
Tulsa....1607 Hunt Bldg.
San Francisco....1050 Rialto Bldg.
Los Angeles....1422 Wm. Fox Bldg.

FABRICATING PLANTS in Birmingham, Chicago, and Greenville, Pa.

Brake, wheel alignment and headlight correction services play an important part in the merchandising program at this McKale's super station in Seattle. Attendants are trained to watch for tire wear which might result from poor brakes, misalignment, or loose front end assemblies

WIDER AUTOMOTIVE SERVICING

Oil Company Stations In Cities With Compulsory Motor Vehicle Inspection Laws Find New Services Are Profitable And Also Pull In Gasoline and Oil Sales

By **JACK N. WESTSMITH**
N. P. N. Staff Writer

● This is the third article written by this National Petroleum News Staff Writer from material gathered on a recent 4700-mile motor trip through eight states in the northwest.

The first article, "Two Bald Headed Tires" appeared in the Sept. 15th issue of N.P.N.; the second article; "The Five-Gallon Buyer Visits the Far Northwest", in its Oct. 13th issue.

COMPULSORY motor vehicle inspection, now on the statute books of many states and large cities, is proving a definite boon to progressive service station operators who are capitalizing on the extra profit possibilities offered by brake relining, wheel aligning and headlight beam correcting and other services.

This was indicated by a study of service station operations in the vicinity of a vehicle testing station established by the city of Seattle in December, 1936. Similar stations will be built and operated by the state in other Washington cities, as a result of a motor vehicle inspection law passed at the 1937 session of the Washington legislature. It is expected the Seattle setup will also be operated by the state.

In Oregon an enabling act has been passed under Section 56-427 of the Motor Vehicle act, which provides that cities of 100,000 or more inhabitants may provide for compulsory inspection of cars. The act prohibits the use of vehicles which demonstration and inspection show are not complying with requirements of laws of this state.

The Seattle vehicle testing station consists of a reinforced concrete building with a testing floor 96 x 160 feet, providing six complete testing lanes.

Each lane is equipped with equipment and personnel to inspect vehicles for registration, license plates, stickers on windows and condition of windshield, tail light, stop light, spot light, miscellaneous lights, signaling devices, clearance lights, reflectors, headlights, headlight bulbs and lens, parking lights, windshield swipe, horn, mirror, muffler and exhaust, steering gear play, wheel alignment, wheel bearings, king pins, tie rods, springs, tires and brakes.

Brakes are tested as to effectiveness, equalization, and pedal reserve. Effectiveness and equalization are tested on a machine which also shows wheel alignment. A testing station attendant inspects pedal reserve as he drives the car through.

Vehicle owners in the city are notified by mail to present their cars for inspection. Notice cards are dated ten days in advance, after which the owner becomes delinquent if he has not appeared. A second notice is issued 48 hours later and this is followed by a police summons.

A 50-cent service charge is levied and if the car passes all tests, the motorist is given a small windshield sticker with a two-inch numeral showing the month of inspection as an aid to road checking of cars for inspection appearance. Cars must be tested every six months.

FOR seven months of operation ending June 30, 1937, the Seattle station had 100,000 vehicles listed in its files out of a total of 107,000 registered in the city. Discounting 11,007 cars listed as not used in the city, in possession of car dealers or not located by the notice cards, there were 88,993 cars subject to inspection.

Of this total 80,814 had appeared for inspection and 8179 cars were delinquent. Certificates of approval were issued to 77,204 and 3610 were rejected and listed as delinquent for failure to return.

The above results were obtained entirely through moral persuasion, appeal, safety propaganda and some threat of arrest for violation. Actually, not over a dozen arrests were made in the seven-month period.

Of interest to the station operator equipped to handle service work on cars rejected is the showing that only 30,462, or 37½ per cent of cars inspected passed the first time, 30,211 cars rejected passed the second time through and 15,156, or 18.7 per cent, were passed the third time. 4985 cars were passed after three or more times through the testing station.

The analysis for this seven-months pe-

Boost your ALCOHOL BUSINESS

ALKOSAVE

MAKES EARLY ALCOHOL SALES *possible*

ALKOSAVE is a sure-fire, fast selling accessory which makes *one filling* of alcohol last ALL WINTER. Every car, truck or bus owner is a live prospect.

ALKOSAVE is an ideal accessory for every filling station—large or small—and will help YOU get the major share of the alcohol business in your community.

The ALKOSAVE is quickly installed merely by fitting a rubber bushing over the bottom of radiator overflow pipe.

ALKOSAVE is a scientifically engineered valve, easily and quickly fitted over the bottom of any radiator overflow pipe. Its action is completely automatic. It prevents loss of alcohol through evaporation, and banishes "freeze-up" worries, even after a warm spell. And ALKOSAVE retails at only 89 cents.

With ALKOSAVE available, you do not have to wait until a freeze before servicing your customers' radiators with sufficient alcohol to last all winter.

See your nearest jobber TODAY and make ALKOSAVE a profitable part of your winter "change over" program.

A NEW, AMAZING ACCESSORY— SELLS ON SIGHT *because*

1. ALKOSAVE, the new radiator protector, ends freeze-up worries.
2. It makes one filling of alcohol last all winter.
3. Every car or truck owner is a live prospect.
4. It is fully automatic.
5. Installed on any radiator in a few minutes and lists at only 89 cents.

NATIONALLY ADVERTISED

EVANS PRODUCTS COMPANY
392 BROAD ST. • NEWARK, N. J.

Portland's municipal testing station has been in operation since the first of the year, inspecting mechanical operating conditions on approximately 1000 cars a day. Cars in the first row are having headlights tested for focus and road coverage by portable testers operated on tracks. Brakes and wheel alignment are tested by other machines, and, at one point in the line, the front of the car is raised and inspected by an attendant for loose tie-rods, wheel bearings and front-end assemblies

riod showed 57.6 per cent of the rejections included poor adjustment of headlights, 49.8 per cent included faulty brakes, 31.3 per cent condition of tail light, 21.7 per cent wheel alignment, 19.3 per cent condition of tie rods, wheel bearings, king pins and springs, and 41.4 per cent needed correction to horn, rear-view mirror, windshield wiper, windshield, license plates and other minor items.

It was pointed out that a report made by the National Safety Council for Seattle up to June 30 showed that, while gasoline consumption was up 17.5 per cent and car sales had increased 21 per cent, accident fatalities had been reduced 20 per cent compared with the same period of 1936. The vehicle testing station was given credit for more than half of this reduction — the balance was credited to the city's drive against reckless driving.

A SIMILAR setup was found at Portland, Ore., where a testing station was built to handle 1000 cars a day. It is estimated there are 120,000 cars subject to this inspection and that the 1000-a-day schedule will have to be maintained to permit two inspection periods a year and take care of new inspections in addition to those of rejected vehicles.

The 50-cent service charge is not paid at this station until the car is passed and this fact is reported to have helped in compliance with the law. Buses, taxies, ambulances, in fact all for-hire and public conveyance vehicles must come in for monthly inspections under a Portland city ordinance.

Oil marketing companies in this area are aiding in the notification of cars due for inspection. Calendars are issued by the city, listing vehicles due on certain dates. For example, cars with license numbers from 174,001 to 175,000 are due for inspection Oct. 1 and 175,001 to 176,000 on Oct. 2 and so on.

These calendars are distributed by oil company truck drivers to service stations in the city, where they are posted for the convenience of motorists. The notices are also mailed out in card form with water bills to city residents.

A total of 117,705 vehicles were inspected in the Portland station during the period of Jan. 2 to July 3, 1937. Brakes were found defective on 15,800 vehicles; headlights defective on 33,170; wheel alignment on 5958; steering (inspected since July 1) on 949; horns defective on 2040 cars. Defective miscellaneous equipment, including tail light, windshield wiper, stop light, license plates, and rear-view mirror, was reported on 13,315 cars.

A study of inspections in August showed the percentage of cars passing through the first time without rejection had increased approximately 15 per cent, indicating that motorists were having their cars checked before coming in for the test.

No correction work is done by the testing station and this is where service stations come into the program. The driver of each car rejected is given a card indicating repairs to be made within the seven days allowed before the vehicle must be returned for another inspection.

Gasoline service stations in Seattle and particularly around the testing depot were found equipped to handle this service work and were doing a land office business in adjusting and relining brakes, correcting wheel alignment, adjusting headlights and repairing other conditions which might make vehicles unsafe on the highway.

Customer contacts resulting from these service sales were also being used to advantage in boosting sales of gasoline, oil, lubrication, tires and other accessory items.

CARL F. MINTON, operator of a Signal Oil Co. outlet around the corner from the Seattle test station, said he was averaging about $25 a day from his brake, wheel alignment, and headlight correction departments, to say nothing of more than doubling his sales on other products and services.

Three months ago this operator installed a machine for testing brakes and wheel alignment in one pump-island driveway. The machine is identical with those in use at the municipal testing station. Such machines as are used by this and other stations and garages are calibrated to give readings comparable with those given by machines at the vehicle testing station.

Minton found motorists were quick to take advantage of his free offer to test their machines before going in for the official inspection. If brakes or alignment were shown to be faulty he was more than half way along toward a service sale and probably had made a permanent customer.

The value of the machine in this respect was demonstrated by an almost overnight jump in sales on other services and products. Prior to installation of the equipment, sales of gasoline had averaged about 3400 gallons a month. During the first month the brake testing and wheel alignment equipment was

A brake and wheel alignment machine installed in this Seattle service station's driveway is bringing the operator extra profit sales averaging $25 a day and has boosted the turnover on other services and products. The motorist can drive in here and automatically test his own car, before going to the municipal vehicle inspection station around the corner

installed this was boosted to 6600 gallons, by the end of the second it was 7600 and 90 days after installation gasoline gallonage 8547 gallons and still on the upgrade.

The boost in sales of other products and services was proportional in many cases. Lubricating jobs, which had averaged about 30 a month, totaled 111 two months after the mechanical service departments were introduced.

Tire sales, which had been negligible, took on new life and in the third month of operation with the new services the station did a $160 tire business. Mr. Minton said this was with little concentration on sales work because business was coming pretty thick and fast. From now on, however, he expects to do big things with tires and other accessory items.

HE estimates his original investment of approximately $900 for the brake and alignment machine and a portable headlight tester was more than covered by profits from the first three months after the equipment was installed.

The service charge on brake or alignment corrections vary over a fairly wide range, but the daily average take of $25 includes about eight headlight adjustment services a day, for which a flat charge of 75 cents each is made.

McKale's Inc., an independent oil marketing company with 12 outlets in Seattle and 9 in San Francisco, is another example of the trend by service stations in this area to include mechanical adjustment and service departments along with their other operations.

The company's 12 stations in Seattle sell about 3,000,000 gallons of gasoline, 40,000 "lube" jobs, and have a total sales volume of considerably above $1,000,000 a year. Oil, tires, batteries, car heaters and radios are important items in the sales program but particular emphasis is laid on merchandising through departments handling automotive adjustments.

Solicitation at the pumps plays an important part in this company's efforts to keep its service departments busy. Tires on every car are checked as a matter of routine and are observed for excessive wear as a result of misalignment of wheels, poor brakes, or loose front end assemblies.

The writer visited one of these stations soon after going through the Seattle vehicle testing station where his car was rejected because the headlight beams were too high. While one attendant was delivering five gallons of gasoline and "selling" an oil drain, another checked tire pressures.

After he had finished he asked the driver if the front wheels had been tested recently for alignment, saying that wear on the right tire indicated the wheel might be out of line. However, when told the testing station had found the alignment good but the headlight adjustment poor, he immediately shifted the attack to sell this item — a 75-cent service charge for about 20 minutes work, but well worth it to the motorist.

Examination showed one of the bulbs had a burned out filament, so the sale was boosted another 40 cents, or up to $3.70 including gasoline, oil and the adjustment.

Headlights on the writer's car are being adjusted in one of 12 stations operated by McKale's Inc. in Seattle. The combination brake and wheel alignment machine is in front of the car on the floor. Readings are taken from what looks like a visible bowl gasoline pump at the left. A flat charge of 75 cents is made for adjusting headlights

Two other stations in this chain were visited and practically the same selling procedure took place at each. One station reported a net of $910 for August in its brake, wheel alignment and light correction departments and another unit in the system, with five employes in the mechanical service departments, took in approximately $3000 the same month on brake relining and adjustments.

These sales produce contacts which are used to advantage in selling other products and services. For example, one station sells 250 to 300 tires a month—it did a $3200 business in this item during August and will average nearly $1000 a month from its lubrication department —has taken in $90 in one day—and expects to do a gross business of $100,000 for the year in all departments.

McKale's employ 130 men at the 12 stations in Seattle and the business has been built to a volume of better than $1,000,000 a year on a foundation of service as an aid to merchandising by a trained personnel and one that is constantly on its toes.

Jobber's Radio Program Features Local Talent

While large oil companies are seeking the public's attention with nation-wide radio hook-ups, a local jobber in Milwaukee is starting a second season of programs over a radio station here.

This is the Pate Oil Co. which has started its winter series of "Hello Neighbor" concerts from 5:30 to 6 p.m. Sundays, on station WTMJ.

Last season the Pate company gave this radio time to local outstanding choral groups, for which Milwaukee is famous. Already the company has sufficient applications for the entire 26 weeks programs this season.

During October the Pate radio program is featuring the Wisconsin Grand Opera Company, Symphonic Male Chorus, Milwaukeans Quartet, Milwaukee Urban League Chorus, and the Festival Singers.

Next month fraternal groups will be on the programs, such as the Shriners, Knights of Columbus and Elks. In December outstanding Women's clubs will be featured.

The four colleges in Milwaukee will be on January programs. In February a Capella Choruses from high schools here that have placed in state contests will be featured. As March will be in the Lenten season programs will be given to church choirs.

Last year the Patte programs continued for three months. On account of the success of making the radio time available to local groups the programs this year will continue for six months.

Launch New Tankers

NEW YORK, Oct. 18.—The Standard Oil Co. of New Jersey's newest oil tanker, the Wallace E. Pratt was launched at the yards of the Sun Shipbuilding Co., Chester, Pa. on Oct. 2. Another new tanker, the Esso Bayway, was launched Oct. 9 at the Kearny, N. J. yards of the Federal Shipbuilding Co., the company announced.

Another new tanker of Standard of New Jersey, the Esso Bayonne, sailed Oct. 4 on her maiden voyage to Baytown, Texas. It was the first of a group of eight new tankers in the company's construction program.

Naphtha Booklet Published

CHICAGO, Oct. 18. — Under the provocative title, Constructive Dissatisfaction", American Mineral Spirits Co. sets out to prove that hardly an industry exists that does not have some essential operation which couldn't be done better with naphtha, of which this company makes 67 varieties. The booklet, of 24 pages, is artistic and ultra-modern, and illustrated by many appropriate pencil sketches of industrial scenes.

Conservation, Production Control, Proration, Taxation, Competition

Urging "good old-fashion competition" in the production of crude oil, as the best protection for the public and in the best interests of the independent marketers, Clarence T. Schock, jobber of Mount Joy, Pa., told the National Oil Marketers convention that two remedies exist if control of production is to be continued.

The first remedy, he said, was for the government to assess an excess profits tax on businesses concerned in producing, buying or selling crude, equal to the amount by which the profits of the business exceed a fair return on the investment, making provision for the drilling of wells, exploitation of new territory and so on.

Under this plan, the government would also be authorized to fix the price at which every grade of crude in every field would sell, to keep the price high enough to avoid economic destruction of the stripper wells. The excess profits of the owners of flush production would go into the U. S. treasury, for the benefit of all people.

The second plan proposed by Mr. Schock is for the federal government to take over all flush production fields, by means of a federal agency, incorporated under state laws or otherwise. A uniform selling price to all buyers would be fixed, the profits from such operations to go into the general treasury. This agency might buy foreign crude, but importation of foreign crude by others would be prohibited.

"The result of either remedy," stated Mr. Schock, "would be that all buyers of crude would be able to buy crude oil at the same price. It would enable independent marketers to join together in groups of sufficient size so that they could build their own refineries and refine their own oil."

By **CLARENCE T. SCHOCK***

Presented Before Annual Convention, National Oil Marketers Assn., Chicago, Oct. 13.

TRUE conservation of our natural resources is a worthy purpose. The God-given wealth of this nation contained within and beneath the surface of the land should not be wasted. Its development into commercial products should be carefully guarded in the interest of the whole people. Care should be taken that our natural resources be not exploited and wasted for the benefit of private owners. It is unfortunate that the mineral resources of our country are not by law and by the Constitution owned by the federal government. Nevertheless, it is possible to avoid the waste of these natural resources by regulations intended for that purpose. Let us avoid regulations which are intended for the enrichment of greedy private claimants to ownership.

It is possible to conserve the crude oil resources of this country and to protect the interests of the public without the use of prevailing proration laws of the oil producing states and without the Oil States Compact and without the Connally Law and without the tariff on crude oil and its products.

The avoidance of physical waste caused by long storage of crude oil above ground can be accomplished by laws or regulations forbidding the storage above ground by the owners of flush production, of any more than a limited percentage of the monthly demand enjoyed by each particular producer. There is no need to take oil out of the ground any faster than shipments on bona fide sales require. The oil can be retained in the reservoir underground by the operation of a simple valve control which, when open, will deliver the oil faster than any shipping requirements may demand.

Purchasers of crude oil can be regulated by law, forbidding them to store any more than a limited percentage of their annual or monthly requirements for refining or for resale would justify. In other words, to put it short, the crude oil should not be withdrawn from the ground until there is a buyer who actually uses it and consumes it within a reasonable time. Other regulations could provide that no owner of an oil well should permit crude oil to flow from his well so fast as to reduce the bottom hole pressure or at a speed so great as to materially reduce the ultimate volume of crude oil recoverable from such well.

Such rules and regulations and others similar thereto would make it possible to avoid waste of underground gas pressure but would not limit the amount of oil that might be extracted by any one oil well owner. Such regulation would not undertake to accomplish stabilization of price. On the contrary it would permit competition between the owners of oil wells.

Advocates of proration would not approve of such a plan because their purpose is to accomplish stabilization of price and a division of the oil reserves pro rata between various owners of oil wells on the basis of the potential production of each one of such oil wells, and at a price fixed by the producers without competition.

The regulation herein suggested is intended for the purpose of avoiding waste by long time storage of crude oil above ground and is based on the theory that the oil reserves beneath the surface of the ground cannot be proven to be owned by any private owner of land, for the obvious reason that nobody can say definitely where the crude oil which flows from a well comes from and nobody can prove who owned it. It may come from beneath a neighboring state. It may come from beyond the border of the country, from underneath the open sea. Nobody knows where it comes from. Accordingly, nobody owns it. The only person that can prove ownership is the person who first recovers it above ground.

Now, if we say by law to the person who is able to recover this crude oil above ground that he may not possess any more of it on hand than he is able to sell for use for immediate requirements, then as fast as he is able to sell for immediate requirement, he should be permitted to take additional crude oil out of the ground. In other words, if this crude oil reserve, as we have above stated, cannot be proven to belong to anybody, it either belongs to nobody or it belongs to the whole nation, or to the state government in which recovered.

If it belongs to the whole people, the nation, then he who recovers it on his own ground and sells it, should be required to pay a tax to the federal government to cover the value owned by the government and the balance of the selling price, would be the producer's reward for services rendered. In case the state owns it such tax would go to the state. If it be conceded that nobody owns this migratory crude oil then it is owned by him who first captures it above ground on his own land.

It is a common error supported somewhat by precedent that the owner of land owns everything located vertically beneath that land. There should be some limit and there is in customary practice. No one questions the right of a landowner to drill a well for water and pump

* Schock Independent Oil Co., Mount Joy, Pa., chairman Independent Petroleum Jobbers Assn. of Pennsylvania.

"AUTOMOTIVE MONEY SAVING FACTS" By J. F. WINCHESTER

A four hundred page comprehensive study of automotive fleet operation from a money-saving standpoint, relating to fleet management, personnel, selection of vehicles, their safe operation and maintenance.

A number of pages are given over to the essentials in accounting with consideration of the factors of insurance, depreciation, inspection and maintenance, and service records.

This book is authoritative—based on the author's experience as manager of the largest automotive fleet in the petroleum industry. $3.

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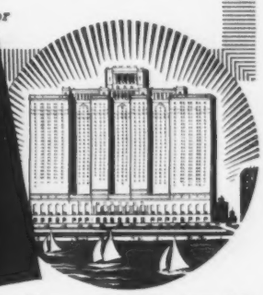
1213 W. 3rd St. • Cleveland, Ohio

...MEN IN THE MAJOR LEAGUES

Those men every community regards as leaders . . . in turn demand similar superior performance. In Chicago these men find at The Stevens the atmosphere . . . the comfort they demand of a hotel. That's the reason they call The Stevens, "America's Grand Hotel." Their strongest endorsements are their repeated autographs on our register.

OTTO K. EITEL, *Managing Director*



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"America's Grand Hotel"
CHICAGO

Room, with Bath, from $3

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. . . Pennsylvania Bright Stocks and Neutrals, we ask that you direct your inquiries to BERRY'S.

Our stocks are manufactured exclusively from pure Pennsylvania crude oil and we are always in position to serve you promptly from one of our refineries most advantageous to you.

We use only the latest methods of refining which guarantees you the high quality products you are looking for.

JAMES B. BERRY SONS' CO., INC. OIL CITY, PA.

Branch Offices: New York City; Chicago, Ill.; Boston, Mass.; Philadelphia, Pa.; Houston, Texas; London, England; Hamburg, Germany; The Hague, Holland.

Refineries: Oil City, Pa.; Emlenton, Pa.; Farmer's Valley, Pa.; St. Mary's, W. Va.
Ocean Terminals: Baltimore, Md.; Tiverton, R. I.; Dorchester, Mass.; Carteret, N. J.; Edgewater, N. J.; Glastonbury, Conn.; Philadelphia, Pa.

YOUR PRIVATE TERMINAL

Do you need a seaport terminal for bulk liquids? One that would be strictly private and entirely your own? Wouldn't it be fine if someone else would build it and pay its entire operating expense? That is just what General American already has done. Our five strategically located terminals give you every advantage of your own private facilities . . . with no investment on your part. Here you will find modern, efficient facilities for any bulk liquid . . . and savings to you through careful handling, minimum evaporation, and lowest insurance rates. General American's five terminals are at your service.

GENERAL AMERICAN
TANK STORAGE TERMINALS

Can Handle Anything That Will Flow Through a Pipe Line

TERMINALS
Goodhope, La., Westwego, La.
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therefrom as much water as he desires. The water may come from elsewhere than under his own land. Just as in the case of crude oil nobody knows where it came from or who owns it. Accordingly and justly, the first known possessor is the acknowledged lawful owner. We take water from streams without limit, although this water may have flowed over the property of others before arriving on our own property.

Likewise above the earth we have the air. There is a limit to an owner's rights above the land. He may erect a building thereon but laws may limit the height thereof. He cannot prevent anyone from looking across his property and he cannot prevent the aviator from flying across. The landowner has no title to the air that blows onto and across his land. He can use as much as may be necessary to sustain the life of the animals on his property and enough to keep his fires and furnaces going. He is permitted to own only such part of it as he captures or consumes.

THERE are other limitations to the landowner's rights above the land. The federal government regulates the use of the air for aviation just as it regulates the navigable streams that flow over the land. No landowner would think to question the federal government's right to do this. Accordingly, there are already in customary practices certain limits to a landowner's rights above and beneath his land. It is perfectly consistent with established lawful practice for the federal government to provide by law that the liquid, mobile, migratory crude oil reserves of this nation are in a state of undeterminable ownership and that he who first captures such crude oil above ground on his own land is the first known owner and therefore the legal owner.

In 1859 the courts of Pennsylvania so decided and wisely established the "law of capture" which was adopted by every court in every oil producing state in the United States. That law was accepted by the industry until in recent years, when the major oil companies became the owners or controllers of the great majority of the oil land of our country. After that and after production caught up to and exceeded demand, production control was advocated under the pretext of conservation. True conservation as above suggested is possible under the old "law of capture" and thereunder the public would enjoy the benefits of competition. Good old-fashion competition is the best protection for the consuming public.

"Conservation" is a magic word. Its magic use has persuaded Congress to permit the greedy oil monopoly to extract hundreds of millions of dollars of unethical profits from the purse of American buyers of crude petroleum. Artificial increased cost of crude means ultimate high cost to the consumer. Conservation of natural resources is a laudable purpose if sincerely and honestly pursued instead of being used as camouflage for some ulterior selfish purpose.

Today, in the name of conservation, we have, under State Proration Laws, the Oil States Compact, the Connally Law and the tariff on petroleum, a monopolistic control which forbids the production of crude petroleum in excess of total

domestic and foreign demand and permits at all times sufficient volume of production to meet such demand. In other words, every barrel of crude oil produced can be sold. No more may be produced than can be sold. The law regulates the quantity produced and saves the producer from any competition in the sale of his crude oil. There is, however, no law regulating the sale price thereof and, accordingly, the crude oil can all be sold for as high a price as those who control its production agree to demand therefor. The only check in the price that may be demanded is the price of competitive fuels.

In the past there has been a difference of opinion among producers of petroleum as to the possibility of the exhaustion of our petroleum resources. Many have believed that they are inexhaustible and that there is no need for fear that we will ever be unable to produce sufficient crude oil to take care of the need therefor. The cry of conservation has never been heard in our land, except when there was a flood of crude oil production. The time when such an honest cry for conservation of our natural petroleum resources should occur is when we have great difficulty in finding enough crude petroleum to meet demand.

AT such periods of time there has never been such a cry from that part of the petroleum industry which advocates production control. Whenever petroleum was scarce and prices rose skyward the petroleum industry was satisfied and did not demand of the Federal Government or the State Governments that they aid in conserving this "irreplaceable natural resource". But just as soon as and whenever the supply of crude oil exceeded the demand therefor then we have heard the cry from the producers of crude oil that something should be done to conserve this great natural resource. At such times the price of crude oil was always low. The circumstantial evidence is, and honest producers will admit it, that the real purpose is stabilization of price rather than conservation of an irreplaceable natural resource.

Although we cannot admit there is any need of federal regulation controlling production, although we believe that the only proper regulation is that accomplished by permitting the operation of the normal law of supply and demand, nevertheless let us assume that some sort of conservation of petroleum resources is necessary and if it be necessary, what is a fair method of accomplishing it?

If the public interest, the National safety and the National defense require state and/or federal control of the production of crude oil, then there should also be accompanying it a regulation of the price and the profit made on such crude oil. If the power of either state or federal government is to be used to control the volume of production of any commodity, then the people who constitute that government should protect themselves against extortion in price resulting in excessive profits to those who happen to be the owners of crude oil. It is manifestly unfair that the power of government should be used to enrich a group

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..THE CONTENTS

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who happen to be the owners of crude oil. Proration and federal support thereof without price control and profit control are absolutely inconsistent with the public interest. Whenever the power of government is used to control price it should be for the universal benefit of all members of that government instead of for the few who happen to be producers of crude oil.

Only two remedies seem possible if control of production is continued.

The first suggested remedy is that all federal laws providing for, or aiding, control of production of crude petroleum be amended with a provision imposing on every business concerned in producing, selling or buying crude petroleum, an excess profits tax equal to the amount by which the profits of said business exceed four, five or six per cent on a fair valuation of the capital investment in such business, with such provision as will not interfere with or discourage development and drilling of new wells.

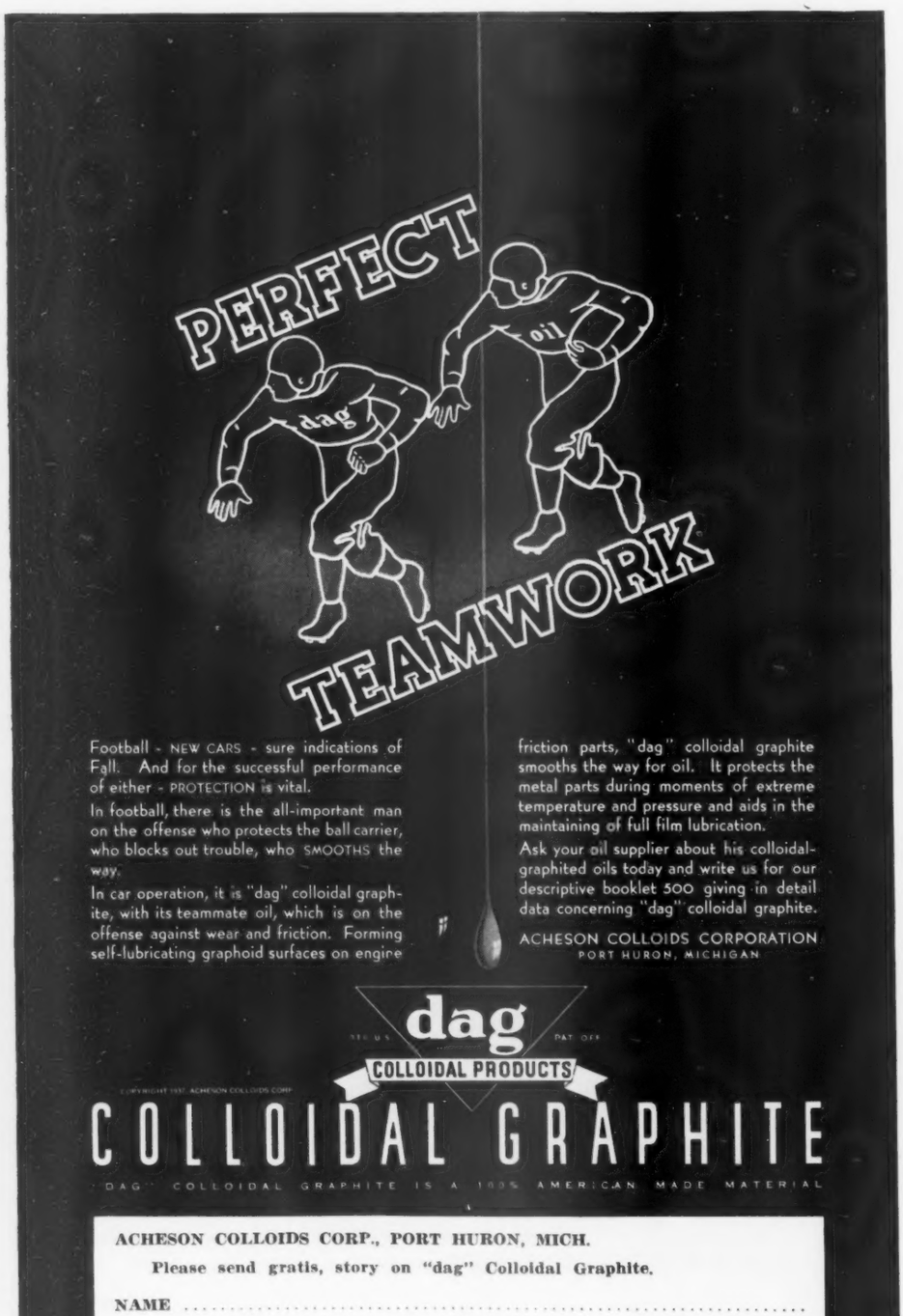
Under this plan, the President, or a department of the federal government, should be authorized to fix the exact uniform price at which every kind and grade of crude oil in each field shall be sold to all buyers, so that the price can be kept high enough to avoid economic destruction of smaller wells which are operated by pumping, the so-called stripper wells which are necessary in the interest of conservation to supply the prevailing demand for crude oil. Such price fixing exists today but it is regulated by the major oil companies or their subsidiaries and is permitted under existing laws. Such price fixing, today, brings excessive profits to the owners of the oil wells through which the crude oil is forced by the underground gas pressure, the so called flush production wells.

Under this first proposed remedy the price fixing would be done by the federal government, instead of by the major oil companies, and the important difference would be that the excess profits created by the power of the federal government for the owners of flush production would, by means of the excess profits tax herein proposed, be transferred from the coffers of the major oil companies, where these excess profits go today, to the Treasury of the United States, thus giving back to the whole people values created by the power of the federal government, which government should serve the whole people instead of the masters of the oil industry.

THE second remedy is that the federal government take over all flush production, in other words, all wells out of which the oil is forced by underground gas pressure, paying the owners thereof a fair price therefor. This could be done by means of a federal agency incorporated under state laws or otherwise. A uniform selling price to all buyers of crude oil should be fixed by the federal agency at a rate which would permit stripper wells to exist, in the same manner as recommended in the first proposed remedy. Such a price would yield to the government a large profit, which would go into the treasury of the federal government for the benefit of the whole people instead of for the benefit of private owners. It would avoid a policy of using federal power and state power to enrich a relatively few private owners.

Such federal agency should be authorized to buy as much foreign crude petroleum as may be prudent, in order that the crude oil reserves of the United States may be conserved sufficiently to guarantee the national safety and the national defense. Importation of foreign crude oil by others than such a federal agency should be prohibited. Exploration of public lands and acquisition by lease or purchase of the right to develop private lands could be authorized in order to provide for the public safety and defense.

The result of either remedy would be that all buyers of crude oil would be able to buy crude oil at the same price. It would enable independent marketers to join together in groups of sufficient size so that they could build their own refineries and refine their own oil. The independent marketer can do marketing at less cost than the major oil companies. He can render the same service at lesser cost or better service at the same cost than the major oil companies can do. What he needs is a fair competitive market in which to buy and he will never have that so long as the control of production lies in the hands of the integrated major oil companies as it does today. If either one of the proposed remedies be applied, then the independent marketer will have a chance; but so long as the integrated major oil companies are able to make ex-



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cessive profits in production and use them to conduct destructive competition in marketing, the independent marketer will not have a fair chance.

It behooves us to see to it that the excess profits enjoyed by the integrated major oil companies in their producing department under state proration, the Oil States Compact and the Connally law are corrected either by taxation or government ownership of flush production. Otherwise there is the peril that these profits, created by governmental authority to the enrichment of private owners, shall be used by those private owners by some method to make the problem of the independent marketer more difficult and impossible of solution.

If none of the remedies herein proposed can be accomplished, then it is far better to repeal all existing control laws instead of trying to modify them and return to the old law of capture so far as the production of crude oil is concerned. Under this old Law of Capture, the first known person to possess oil above and on his own ground was admitted to be the legal owner of it. No other owner could be proven. When a state or any government undertakes to say that any oil produced in excess of proration laws is stolen oil, it must be able to show where the oil came from and who owned it. If nobody owns it, nobody stole it. The only lawful owner should be the first known possessor and that is the person who first possesses it on and above his own ground.

THE Law of Capture has been much maligned. It was established by the judges of the Pennsylvania courts in 1859 and was the only reasonable determination of ownership possible, and still is. If we want to go back to strictly ethical principles, the mineral wealth of this country lying underneath and within the land should belong to the whole people, or should be treated and taxed in a manner which will bring about the equivalent of public ownership. Unfortunately, the founders of this government failed to forsee the importance of governmental ownership of mineral resources. Under the circumstances, the only remedy is to apply complete regulation and taxation as herein proposed or wide open competition in such a manner that the government will not be in the position of enriching the few at the expense of the many, contrary to all democratic principles.

We independent jobbers have no fear of competition provided we have competition in every department of the industry. We believe that competition in all divisions of the petroleum industry is the best and safest protection to the consuming public. After all is said and done we cannot expect ultimate success for any legislative policy unless it be in the interest of the consuming public. We must carry our cause back to the consuming voter. Everybody uses gasoline and oil. Let us pursue a policy that will meet approval of the consumers. If we do not win support from the voters in our respective districts we will never win success. Votes are what count with Congressmen. Protests from constituents will be heeded. You can't get the voter to help unless you show him that you are working in his interest. That, we can do if we pursue the correct policy and tell the consumers within our respective districts about it. The

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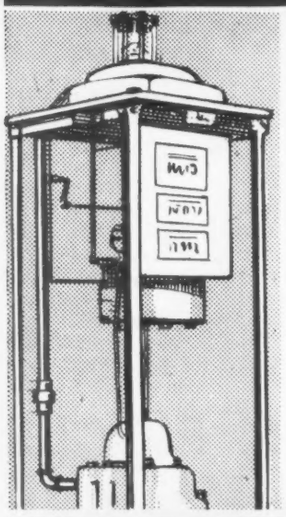

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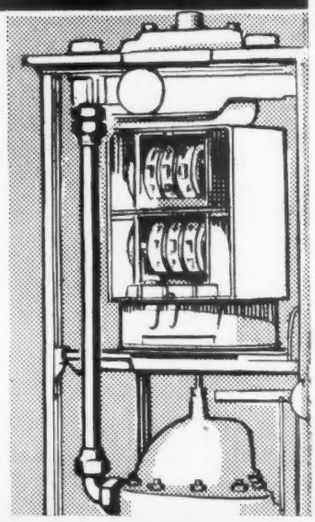

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average jobber is apathetic on this subject. We must fight if we would win. Watchful waiting gets us nowhere.

We seek no share of the unethical profits which now enrich the major oil companies, but we demand fair play and ask that the excess profits on crude oil created by federal legislation be transferred from the possession of the masters of the crude oil industry to the Treasury of the United States. That method or wide open competition in crude oil production is the only way to protect the public and to throw off the yoke which oppresses us.

The majors have unlimited funds for propaganda. We cannot cope with them in lobbying at Washington. As usual they controlled the last session of the 75th Congress, and the Administration approved the Connally law, the tariff and even recommended in advance the approval of the Interstate Oil Compact, and of course permitted Secretary Ickes to work in the interest of the major oil companies.

Our only defense lies with the consuming public. We independents must tell them our story and of our ability to serve. Don't fail to call attention to the conspiracy trial at Madison. Now is the time to strike and strike hard.

Walter Teagle, when he resigned as president of the Standard Oil Co. of New Jersey, in his report to stockholders on the condition of his company declared; "The basis of this business is crude oil". Mr. Teagle knew whereof he spoke.

We independents must not fail to realize that *THE BASIS OF OUR OPPRESSION IS CRUDE OIL.* Let us not falter in our demand that this unethical private monopoly of crude oil be outlawed, in order that true conservation and fair competition may prevail.

Nobody likes too much government in business. But we have government in the oil business. The major oil companies invited it in. A powerful oil lobby at Washington continues this influence. If we must have federal regulation in the oil business as we now do have, let it be in the interest of true conservation, and let it protect the consuming public against extortion. The present monopolistic control of the oil industry violates every principle of our anti-trust laws; it out-Rockefellers Rockefeller; it is an abomination in the land of a free people.

Champlin Buys Portion Of Rule Properties

TULSA, Oct. 16.—E. S. Rule, president of Golden Rule Oil Co., with headquarters in Wichita, Kan., has sold all of his bulk plants and service stations except those in Colorado Springs, Colo., and Wichita, to Champlin Refining Co. of Enid, Okla.

Established in 1914, Mr. Rule has been active head of his company for the 23 years it has been in existence. He built up an extensive distribution in Kansas and adjacent states and then built a refinery in North Wichita, which has operated continuously for 17 years. Rule was credited with developing several innovations which later were adopted on a national scale by marketing branches of the industry.

THE BIERMANN BILL

Discussed by Its Author

By FRED BIERMANN*

(Presented Before National Petroleum Marketers Assn. Banquet, Chicago, Oct. 13.)

To Press for Passage of Bill

Congressmen Fred Biermann, of Iowa, author of the bill introduced in the last session of Congress to divorce marketing from other operations in the oil industry, will press for action on his bill in the coming session of Congress, he told members of the National Oil Marketers Assn. at their convention in Chicago.

He told the independent marketers he was confident the bill could be enacted and said he was going to try to get a hearing on it early in January. He asked the marketers to write to their Congressmen at that time and give their reasons why the bill should be passed.

"I am satisfied this bill can be enacted into law if the members of this association, each one individually, makes it his business to write to his Senator and his Congressmen, giving reasons why this bill should be passed," stated Biermann. His talk on the bill, republished herewith, was presented before the N. O. M. A. banquet Oct. 13.

I THINK this is a day and age when the people have awakened to the fact that something has to be done to protect the independent merchant in the business life of our country. If that is not done, the young men of the future are not going to be able to look forward to the time when they can be their own bosses. The best they can look forward to is for some promotion in the employ of some corporation. Unfortunately these young men get too old for the corporations very early in life.

I mentioned to one of the newspaper men here this afternoon that I attended a meeting in Des Moines some years ago of the Iowa Press Association. One of the large advertising agencies of the country had a man there to speak to us. This man astonished me by saying the oldest man in their corporation was forty-two years old. This corporate ownership and this corporate method of doing business tends toward putting the dead line on people very early in life.

Some years ago, there was chaos in the producing and refining petroleum fields, such chaos that the independent states could not contend with it, and that problem, like many others, has been thrown into the lap of Congress. The result was the Connally "hot oil" act, which had a couple of purposes. One of them ostensibly was to conserve the oil resources of the U. S., the other to bring some kind of system out of the chaos, so the producers and refiners, instead of cutting each other's throats would have a reasonable chance to make some money.

I suppose to some degree the Connally act has conserved the oil resources of the country, but I think it has not done that so perfectly as it has accomplished another purpose. Tariffs kept out gasoline and oil from coming in from foreign countries, which could aid in the conservation of our resources here. Every year we ship out a great deal more petroleum products than we ship in. But as far as bringing order out of chaos for the producers and refiners, it did a fine job. The producers and refiners in the U. S. made money. I want them to. I want every legitimate business in the U. S. to make a reasonable profit; but, unfortunately, this act has produced a control of production which has been followed by price control in the marketing field. It has produced a condition you men know far better than I, a condition that has made the position of the independent marketer precarious. As I have said, I know you men know these conditions better than I do, but I want to read you some short excerpts from a few of many letters I have received from every corner of the country.

This is a postcard from Texas. I shall not read the names of the signer. "I want to congratulate you on your bill HR-7800. If passed it will be the salvation of the independent oil men. The big companies take losses on one and make it up on another; by shifting these profits and losses they eliminate the independents. It wouldn't be so easy to do this if they didn't control production."

Congress, when it passed a law designed to make it possible for the producers and refiners to make a decent profit did not intend that the producers and refiners should make their profit at the expense of almost the existence of the independents.

This man writes from Seattle, Washington, speaking of this bill: "Your stand in this matter will be greatly appreciated by all independent marketers of petroleum products as well as by the fair-minded public, both of whom are being injured by the major oil companies' methods. There should be no place in our economic structure for trusts so powerful as to exert a strangulating control over a commodity so necessary to our national welfare and prosperity as oil."

One from Wisconsin: "On my return from France I went to work for a big major oil company. Then in 1921 started my own business. Now with the tactics of the major oil companies I am confronted with a situation that is beyond my control and, if it is allowed to continue, I am just on my way out of the oil business."

ONE from Nebraska: "The major oil companies are using very unfair means in competing with the independent marketer. I hope you will be successful in bringing your proposed bill into a law."

One from Kansas: "Where the supply is controlled and an arbitrary figure set for the price at which it is sold in tank car lots, and on the other hand the retail price also set by the same organization that supplies the commodity, it places a noose around us at all times. The major oil companies are in the habit of tightening this noose at opportune times."

One from Massachusetts: "We have been in the marketing of petroleum products for the past twelve years and found ourselves able to make a living until the major companies began breaking down our margins. Our present margins are

*Congressman from Decorah, Ia., author of the bill.

so small that we cannot compete with these large companies because of revenues they receive from other sources than marketing."

That reminds me that in my state of Iowa, in August, the government asked for bids on its needs for October, November, December. Every single drop of that material was bid in by major oil companies, of whom I have a list in this letter. I checked those figures with the petroleum division of the Department of the Treasury when in Washington a few days ago. The figures here show what this was bid at and also the cost figures to the independent marketers in the state of Iowa.

A letter from Minnesota: "I am delighted to express my hearty approval of your Bill HR-7800, which bars major oil companies from marketing. Your bill will have a stabilizing effect on the oil business and save the independent oil marketer from bankruptcy and ruin."

A letter from Illinois: "The passage of this bill will afford the protection which the independent oil marketers need if they are to continue in business in competition with the major oil companies. The major oil companies for years have been forcing the independent marketer out of business through maintenance of low margins that do not give the independent a marketing profit. The major oil companies absorb their marketing losses in other lines of business. Your bill gives the independent marketer a new lease on life."

SPEAKING of major oil companies absorbing their marketing losses out of other activities, I suppose some of you have done me the honor to have read a speech I made July 26 in which I set out an excerpt from a prospectus issued by The Texas Corp. dated February 5, 1937, in which they explained the reason why that prospectus shows their marketing operations have for years shown a loss.

They say that is the customary thing among the big companies and it is not considered bad business practice. Of course, if the major oil integrated companies do that, if they take a loss in the marketing business, it certainly cannot be expected the independent fellow is going to continue to exist if he has to make a profit where the big fellows make a loss.

A point was made to me this evening after I came in that, by making the marketing of petroleum products an unprofitable business, the major oil companies are not only working a hardship on the independents, but they are working a hardship on the tax collecting bodies of the U. S. There are hundreds and thousands of independents in the U. S., who if they were making a fair profit, would be very nice taxpayers to the community, the state and nation; but being forced to operate at very small margins and many at a loss, the government of the U. S. from the community up through the state and nation, loses probably millions and millions of dollars in taxes which it would receive if the marketing field were allowed to stand on its own footing.

I have other letters here but I shall not trespass upon your time to read them. My Bill 7800, to which these letters have referred, is not a very long bill, and I presume Paul Hadlick has some copies available. The meat of the whole bill is contained in Section 3.

"It shall be unlawful for any person or affiliate of such person, directly or indirectly, to engage in the marketing of petroleum products and at the same time be engaged in one or more of the other three branches of the petroleum industry, namely production, refining, and transportation."

There are good precedents with this kind of legislation. About 30 years ago, a congressman from my state named "Pete" Hepburn sponsored a bill known now as the Hepburn law. At that time it had been discovered that a coal mining company that did not own a railroad could not compete in marketing with a coal mining company that did own a railroad. So the Hepburn law provided that mines and railroads should not be under the same ownership.

During the war, the government investigated the packing situation in this city. The upshot of that was a consent decree in 1920, under which the big packers agreed they would not engage in the retailing of meat, for the very good reason that an independent meat marketer could not compete with a neighbor who was part of a great packing company.

In the state of North Dakota recently a law was passed which forbids a producer of motion pictures to also operate a theater, the reason for that being the same as that behind the Hepburn law, and behind this consent decree, namely, that the independent buyer of films cannot compete with the man running the theater next door if the man next door is a producer of films.

Of course, I am just mulling over facts that you gentlemen are well aware of and probably I have talked too long on that feature of it.

What I do want to emphasize tonight is what I think you men should do regarding the very practical thing of enacting this bill into law. I feel confident this bill can be enacted into law. The principal reason is that I think it is altogether right it should be enacted into law. I want to make this suggestion to you. I am going to try to get a hearing on this bill the fore part of January and I think it can be done but I want to make this suggestion to you, that, along about the latter part of this year or the fore part of January, each and every one of you and every other member of your association write to his Congressman and to his Senators and explain to them the reason why this bill should be enacted into law. Don't get out any petitions. Petitions are almost meaningless because the signature is easily gotten, and I think almost any man in public office does not consider a petition worth very much.

But put down the reason why you think this bill should be enacted into law. If possible give some of your own experiences with the present situation and what you think this bill would do to correct that situation. Don't ever doubt that these letters are given consideration by the Congressman or Senator. Petitions are not given so much consideration.

The last several years the Congress of the U. S. has given evidence that it wants to maintain in existence the little independent fellow. The Robinson-Patman act was an example of that. That act was designed to protect the little merchant from unfair competition by the big fellow, nothing more, just to give him a fair shake.

At the last session of Congress, there was passed an amendment to another law, another bill, a measure which permits a state having an anti-loss leader law to enforce that law.

I merely cite these things to show you the Congress is minded to protect the independent merchant of the country. I believe all that is necessary for the passage of this bill into law is that the independent marketers of oil in the U. S. present their case to the Congressmen of their districts and to their Senators. I most strongly urge you to do that.

The more I investigate this situation, the more I am persuaded that something like this has to be enacted into law if we are going to continue to have independent oil marketers.

THEY say everybody who goes to Europe wants to talk about it when they get back. I have tried to avoid that but I have been back so recently maybe you will pardon me.

As is my custom when I am anywhere out of my own community, I made inquiries regarding conditions there. I was very much impressed with the fact that in France almost all business is conducted by individual or family ownerships. There is very little of this chain ownership, very few of these great concerns that by their very size menace the little fellow. The upshot of it is that France has been going through a period of stress —I think worse than we have gone through, being confronted with a situation a thousand times more serious than confronts us right now and she is in reasonably good shape. By the official reports in France in September only some 300,000 are unemployed, not very many for a nation of 40,000,000. I wish our percentage was not any larger.

I can very well imagine that one of the reasons for that comparatively little unemployment is the fact there are so many individual establishments, so many little ownerships of individuals or families that don't draw the forty-year limit and that are not so greatly affected by these waves of depression that go over a country now and then.

I am not one of these business baiters. I never have thought it was statesmanship to attack any concern merely because it was big, but I do believe it is statesmanship that if you have to choose between the welfare of the great big fellow and the welfare of a thousand or ten thousand little fellows you choose the little fellows.

I do not believe the bill, if enacted into law, would have anything but good effect on the big fellows. Their own statements show they lose money on their marketing in many instances. If they can stop that loss, it is going to be better for them financially as well as better for the little fellow.

New Patents

Compiled by R. E. Burnham, patent and trademark attorney, 511 Eleventh Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 25c each. State number of patent and name of inventor when ordering.

August 17, 1937

REFINING

Manufacture of motor fuel—Kenneth G. Mackenzie, Westport, Conn., assignor to Texas Co. Filed Sept. 26, 1928. No. 2,090,007.

Process of purifying cracked hydrocarbons—Harris A. Smith, Port Arthur, Tex., assignor to Texas Co. Filed May 28, 1925. No. 2,090,159.

Method of sweetening petroleum distillates—Clinton E. Dolbear, Los Angeles, Calif., assignor to Philip Wiseman, P. Kenneth Wiseman and Clinton E. Dolbear, trustees. Filed Dec. 6, 1934. No. 2,090,190.

Distillation of hydrocarbon oils—Robert E. Wilson, Chicago, Ill., assignor to Standard Oil Co. (Ind.) Filed Dec. 31, 1934. No. 2,090,245.

Thermal conversion of hydrocarbons—Charles C. Towne, Poughkeepsie, N. Y., assignor to Texas Co. Filed March 28, 1933. No. 2,090,272.

Method of making lubricating oil—Rudolph C. Osterstrom, Kenilworth, Ill.; assignor to Pure Oil Co. Filed June 27, 1935. No. 2,090,333.

MISCELLANEOUS

Treatment of wax—George W. Ritter, Philadelphia, Pa., assignor to Atlantic Refining Co. Filed Jan. 30, 1935. No, 2,089,-984.

Liquid fuel—Arthur A. Roberts, London, England. Filed July 17, 1934. No. 2,090,-393.

Computing registering mechanism for liquid dispensing apparatus—Carl K. Schwartz, Eikhart Lake, Wis., assignor to John Wood Mfg. Co., Conshohocken, Pa. Filed Nov. 6, 1934. No. 2,090,487.

Stabilizer hydrocarbons (cracked gasoline)—Iwan I. Ostromislensky, New York, N. Y. Filed Jan. 27, 1936. No. 2,090,484.

Method and apparatus for heating hydrocarbons — Hermann C. Schutt and John W. Throckmorton, New York, N. Y., assignors to Alco Products Co. Filed Oct. 9, 1933. No. 2,090,504.

Venezuelan Production Is 22% Above 1936

WASHINGTON, Oct. 18.—Production of crude petroleum in Venezuela in August amounted to almost 18,000,000 barrels, an increase of 22.3 per cent over production in August last year and of 5.1 per cent compared with July this year, according to information reaching the Department of Commerce from its Caracas office.

Exports of petroleum products during the month amounted to about 16,300,000 barrels, including about 11,000 barrels of gasoline, and representing an increase of about 14.6 per cent over August exports last year and 0.13 per cent over July exports this year.

During the first eight months of this year, Venezuelan crude production amounted to a little more than 122,000,000 barrels, compared with about 108,500,000 barrels in the same period of 1936.

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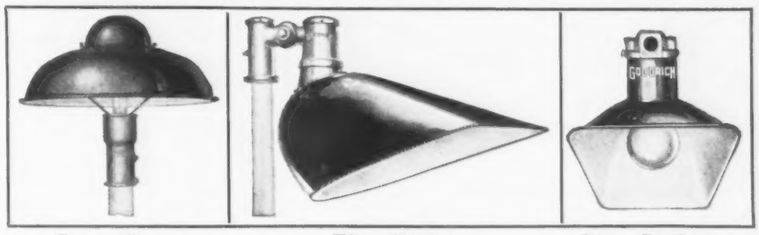

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10.67% Gain In "Gas" Consumption In First Seven Months of '37

N. P. N. News Bureau

NEW YORK, Oct. 18.—Gasoline consumption in the U. S. for the seven months ended July totaled 11,947,598,000 gallons, an increase of 1,100,561,000 gallons, or 10.14 per cent, over the corresponding period of last year, according to tax reports filed by wholesalers and dealers in the various states, the American Petroleum Institute reports.

This is at the daily average rate of 56,357,000 gallons this year, compared with 50,925,000 gallons for the same period last year, an increase of 10.67 per cent. The difference in per cent of change for the total period and for the daily average is due to the extra day last year.

Only one state indicated a decrease in consumption in the seven months this year. That was South Dakota, with a decrease of 0.12 per cent. Increases ranged from 0.43 per cent in Nebraska, to 20.34 per cent in South Carolina. Increases in the six states of largest consumption were: California, 6.89 per cent; Illinois, 10.94; New York, 8.93; Ohio, 12.08; Pennsylvania, 13.71; and Texas, 11.68 per cent.

During July this year, consumption totaled 2,070,479,000 gallons, an increase of 139,068,000 gallons, or 7.20 per cent, over consumption in July a year ago. Daily average consumption in July this year was 66,790,000 gallons, compared with 62,304,000 in July a year ago.

Detailed figures are given in the accompanying table.

August Exports of Oil

N. P. N. News Bureau

WASHINGTON, Oct. 18.—Exports of petroleum products from the U. S. in August amounted to $38,634,430, compared with about $23,397,000 in the same month last year, according to Bureau of Foreign and Domestic Commerce figures.

Crude exports in August were almost 2,000,000 barrels above those for August, 1936, and their value was more than $3,000,000 higher. The figures are: August, 1936, 5,561,008 barrels, $7,240,997; August, 1937, 7,362,672 barrels, $10,891,452.

Gasoline exports increased from 1,909,102 barrels, valued at $4,982,703, in August, 1936, to 2,895,585 barrels, valued at $8,553,367 in that month this year, and kerosine exports jumped from 606,868 barrels, valued at $1,266,718 to 956,002 barrels, valued at $2,256,304, in the same period.

United States' best crude customer, Canada, increased her imports of American crude to 4,187,557 barrels in August, compared with 3,298,310 barrels in that month of 1936.

Russia and United Kingdom (Great Britain) both increased their imports of American gasoline, compared with August a year ago; Russia from 159,594 barrels to 274,711, and United Kingdom from 204,500 to 307,800 barrels.

Kerosine exports to China rose from about 96,000 barrels last August to around 103,000 barrels in August, 1937, and the exports to the port of Hong Kong jumped from 3000 barrels to 61,000 barrels in the same period.

Gasoline Consumption By States, Seven Months of 1937

	Month of			% Change	7 Months Ended With		% Change
	June, 1937	July, 1937	July, 1936	1937 over 1936	July, 1937	July, 1936	1937 over 1936
	Thousands of Gallons				Thousands of Gallons		
Alabama	18,810	20,789	18,070	+15.05	128,243	112,117	+14.38
Arizona	9,288	8,994	8,195	+ 9.75	59,268	54,076	+ 9.60
Arkansas	14,262	15,212	14,430	+ 5.42	93,679	83,427	+12.29
California	158,511	154,821	150,223	+ 3.06	1,010,655	945,464	+ 6.89
Colorado	20,804	23,427	21,220	+10.40	124,670	112,706	+10.61
Connecticut	30,601	33,206	31,187	+ 6.47	182,847	165,336	+10.59
Delaware	5,151	5,758	5,218	+10.35	31,347	27,499	+13.99
District of Columbia	12,110	12,718	11,668	+ 9.00	78,674	71,591	+ 9.89
Florida	24,342	24,576	22,823	+ 7.68	194,654	187,777	+ 3.66
Georgia	26,980	29,275	27,346	+ 7.05	183,579	167,899	+ 9.34
Idaho	9,204	9,976	9,361	+ 6.57	49,298	44,999	+ 9.55
Illinois	118,706	126,579	115,469	+ 9.62	732,213	660,030	+10.94
Indiana	58,105	59,013	53,125	+11.08	350,079	309,296	+13.18
Iowa	47,976	47,658	45,567	+ 4.59	282,388	256,636	+10.03
Kansas	52,522	54,984	48,374	+13.66	270,724	261,144	+ 3.67
Kentucky	22,823	23,931	22,466	+ 6.52	142,079	124,447	+14.17
Louisiana	19,951	21,059	19,970	+ 5.45	131,799	120,224	+ 9.63
Maine	14,252	17,905	16,357	+ 9.46	77,791	70,066	+11.02
Maryland	24,592	26,391	23,860	+10.61	151,620	133,966	+13.18
Massachusetts	66,062	71,507	67,619	+ 5.75	393,231	361,059	+ 8.91
Michigan	104,229	111,724	102,022	+ 9.51	629,780	546,433	+15.25
Minnesota	48,342	54,232	52,681	+ 2.94	274,816	260,266	+ 5.59
Mississippi	17,303	17,044	15,617	+ 9.14	106,926	91,113	+17.35
Missouri	52,909	55,215	54,049	+ 2.16	327,763	314,976	+ 4.06
Montana	11,105	13,218	12,905	+ 2.42	63,950	61,179	+ 4.53
Nebraska	21,181	23,091	24,232	— 4.71	128,692	128,141	+ 0.43
Nevada	3,840	4,034	3,679	+ 9.65	20,011	18,481	+ 8.29
New Hampshire	8,255	10,332	9,517	+ 8.56	46,905	43,271	+ 8.40
New Jersey	75,111	83,779	73,496	+13.99	466,647	408,526	+14.23
New Mexico	7,996	8,886	7,346	+20.96	49,753	41,810	+19.00
New York	165,749	187,289	185,870	+ 0.76	1,025,057	940,982	+ 8.93
North Carolina	32,694	34,223	32,327	+ 5.86	217,697	187,894	+15.96
North Dakota	11,562	12,813	11,346	+12.93	65,542	60,900	+ 7.62
Ohio	115,826	120,138	111,244	+ 7.99	725,681	647,468	+12.08
Oklahoma	39,646	38,419	35,231	+ 9.05	219,674	209,952	+ 4.62
Oregon	20,929	24,031	22,155	+ 8.47	125,330	117,477	+ 6.68
Pennsylvania	129,502	138,250	125,645	+10.03	797,291	701,126	+13.71
Rhode Island	11,132	12,343	11,716	+ 5.35	69,779	64,171	+ 8.74
South Carolina	15,772	16,988	14,646	+15.99	107,345	89,200	+20.34
South Dakota	12,573	12,375	11,445	+ 8.12	63,859	63,936	— 0.12
Tennessee	26,016	24,771	23,670	+ 4.65	151,595	138,289	+ 9.62
Texas	108,109	111,988	101,346	+10.50	687,052	615,196	+11.68
Utah	8,514	9,232	8,642	+ 6.83	48,884	44,123	+10.79
Vermont	6,350	7,690	6,902	+11.42	34,622	31,381	+10.33
Virginia	31,053	32,302	30,745	+ 5.06	192,126	171,635	+11.94
Washington	30,954	35,015	32,446	+ 7.92	185,569	177,109	+ 4.78
West Virginia	18,200	18,531	17,271	+ 7.29	110,891	97,742	+13.54
Wisconsin	52,271	56,883	53,273	+ 6.78	301,016	273,470	+10.07
Wyoming	6,553	7,864	7,399	+ 6.28	34,417	31,031	+10.91
Total	1,948,728	2,070,479	1,931,411	+ 7.20	11,947,598	10,847,037	+10.14
Daily average	64,958	66,790	62,304	+ 7.20	56,357	56,925	+10.67
Change from previous year:							
Total change	.....	+139,068	.....	.....	+1,100,561	.....	.....
Percentage change in Daily Average	.....	+7.20%	.....	.....	+10.67%	.....	.....

Markets

At A Glance . . .

Pennsylvania: Cylinder stocks at new lows.

Mid Continent: Bright holds price despite Pennsylvania drop.

Mid-Western: Michigan gasoline offered at lower prices.

Eastern Seaboard: Unleaded gasoline down one-quarter cent.

Coastal: Roumania re-enters open market.

California: Fuel oil prices firmer.

Wax: Crude scale market inactive, fully refined, steady.

Pennsylvania

Cylinder Stocks Soft

N. P. N. News Bureau

CLEVELAND, Oct. 18.—Bright stocks declined 2 cents on all grades during the course of the week ended Oct. 15. Increased movement against contracts and greater number of spot sales indicated that this market had levelled off, some traders said, however. 25 pour No. 8 color was selling at 16 cents to the trade, with other pour tests at the customary differential. Some refiners, however, reported they found the 10 and 15 pour test market relatively better.

Cylinder stocks were unsettled as the week closed, with sales and quotations reported at widely varying prices. Trading was more active than in previous three weeks, however, and a few sellers said they would begin buying at present prices.

U. S. motor gasoline in the lower field eased another 0.125 cent to 5.50 cents per gallon, f.o.b. the field, but remained firm in the upper district. Other gasolines were moving well.

Demand for kerosine and fuel oil continued strong, with some refiners quoting an 0.125 cent higher on both products than the previous week's prices. The general level, however, was unchanged.

Wax and neutral oil markets were reported firm and prices were unchanged.

Mid-Continent

Bright Stocks Unchanged

N. P. N. News Bureau

TULSA, Oct. 18.—Mid-Continent refiners manufacturing bright stocks observed last week with concern and wonderment at the tumble in Pennsylvania bright stock prices. Except on one or two grades, however, the western refiners up to the end of the week had made no revisions in their quotations. In some quarters the Pennsylvania situation was analyzed as an effort on the part of several refiners to clean out high cold test stocks as quickly as possible.

New buying which developed on Oct. 11 was sufficient in volume to take the slack out of the Grade 26-70 the first half of the week. Toward the end of the week, however, the market was quiet and material more freely offered although no price shading was reported.

Motor fuel buying was spotty in the open market, although most refiners said contract customers continued to order a fair volume of gasoline.

The high octane grades were more freely offered in a few quarters. Small quantities of a high octane motor fuel with a high initial boiling point began to appear in the resale market at an offered price somewhat below the prevailing quotations. Some of the trade saw in these offerings an attempt on the part of the sellers to reduce inventory of summer grade of motor fuel without attempting to make it more suitable for winter use by lowering the initial.

Kerosine demand was brisk in most quarters with supplies still tight.

N. P. N. Refinery Index

The Refinery Index shown below is the calculated average return from refining a barrel of 36 gravity Mid-Continent crude into its various principal products at the current price of crude oil. The index indicates the following margins in cents per barrel between cost of crude and current selling price of products.

Date	Margin
Oct. 1	55.3
Month ago	55.2
Year ago	45.7

N. P. N. Gasoline Index

	Dealer T.W. Cents per Gallon	Tank Car Cents per Gallon
Oct. 18	10.63	6.63
Month ago	10.72	6.72
Year ago	10.04	6.26

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 13 wholesale markets for regular-grade gasoline.

Mid-Western

Michigan Gasoline Prices Down

N. P. N. News Bureau

CHICAGO, Oct. 18.—Straight run gasoline for shipment within the state was reduced 0.25 cent by Michigan refiners the second week of October. For shipment outside the state prices for this product were reported to be off about 0.5 cent.

The continued relatively high rate of crude throughput together with a decrease in consumption has resulted in a build up of gasoline stocks at Michigan refiners, according to reports. This product was said to have been offered as low as 4.25 cents, f.o.b. refinery for shipment outside the state. Some shading of the 5 cent f.o.b. refinery for in-state shipment also was heard.

Offerings of gasoline out of the southwest were free from Chicago sellers during the week. Some price shading was reported as the week progressed.

Week opening quotations for high octane U. S. Motor were off 0.125 cent. Open market movement of all grades of gasoline was reported extremely spotty and the volume moving on contract has decreased somewhat, sellers said.

Kerosine was reported steady in the Mid-Western and Michigan markets. Kerosine, as such, however, was not finding a ready market. It was said to be moving mainly as a fuel for range burners.

The prevailing heavy demand for range oil and No. 1 distillate has resulted in a good portion of the normal kerosine supply being turned into these channels, thus lessening the available supply of kerosine.

Eastern

Gasoline Prices Lower

N. P. N. News Bureau

NEW YORK, Oct. 18.—A reduction of 0.25 cents in spot tank car prices of unleaded gasoline by Standard of New Jersey appeared to be the outstanding feature of light oil markets along eastern seaboard during the past week.

The Jersey company posted above 65 octane gasoline at 7.50 cents f.o.b. Bayonne (for New Jersey delivery) and 7.75 cents f.o.b. Baltimore, Wilmington, Norfolk and Charleston seaboard terminals. Some tank car sellers already were quoting these prices, while others continued to ask 0.25 cents higher as the week ended.

No general changes were reported in gasoline prices for New York and New

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon, except heavy fuel oils in dollars per barrel, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Gasoline *and* Naphtha

Prices Effective	Oct. 18	Oct. 11
OKLAHOMA		
U. S. Motor: (a) (Octane Test L-3)		
62 oct. & below	4.75 – 5.00	4.75 – 5.00
63-66 oct.	5.25 – 5.50	5.375– 5.50
67-69 oct.	5.625– 5.875	5.625– 5.875
70-72 oct.	5.875– 6.00	6.00
60-62, 400 e.p.	*4.75 – 5.00	*4.75 – 5.125
64-66, 375 e.p.	*5.125– 5.25	*5.125– 5.25
68-70, 350-360 e.p.	*5.125– 5.375	*5.125– 5.375
WESTERN PENNA.		
Bradford-Warren:		
52-54 naphtha	*5.875– 6.00	*5.875– 6.00
Motor gasoline:		
U. S. Motor (58-62°)	6.00 – 6.25	6.00 – 6.25
Min. 60 oct.	*7.50 – 7.75	*7.50 – 7.75
Min. 65 oct.	*7.75 – 8.00	*7.75 – 8.00
64-66, 390 e.p.	6.125– 6.25	6.125– 6.25
68-70, 350-360 e.p.	6.25 – 6.375	6.25 – 6.375
Other districts:		
52-54 naphtha	*5.50 – 5.625	*5.50 – 5.625
54-56 naphtha	5.625– 5.75	5.625– 5.75
Motor gasoline:		
U. S. Motor (58-62°)	5.50 – 5.625	5.50 – 5.625
Min. 60 oct.	7.375– 7.75	7.375– 7.75
Min. 65 oct.	7.50 – 8.00	7.50 – 8.00
64-66, 390 e.p.	5.75 – 5.875	5.75 – 5.875
68-70, 350-360 e.p.	6.00 – 6.125	6.00 – 6.125
CENTRAL MICHIGAN (Prices f.o.b. Cent. Mich. refinery group basis. Shipments, however, may originate at plants outside Central group).		
Str.-Run Gasoline	5.00 – 5.50	5.25 – 5.50
64-66 octane gas.	7.75 – 8.00	7.75 – 8.00
68-70 octane gas.	8.25 – 8.50	8.25 – 8.50
CALIFORNIA (3c tax to be added to prices if used in state)		
U. S. Motor:		
54-58, for instate shipment	7.50 – 9.25	7.50 – 9.25
54-58, for outside state shipment	8.25 – 9.00	8.25 – 9.00
58-61, 375-400 e.p., 65 oct. & above	8.50 – 9.75	8.50 – 9.75
†N. TEX. (For shipment to Texas and N. Mex. destinations; Group 3 prices quoted on northern shipments).		
U S. Motor: (a) (Octane Test L-3)		
62 oct. & below	4.875– 5.00	4.875– 5.125
63-66 oct.	5.50	5.50
67-69 oct.	5.75	5.75
70-72 oct.	6.00	6.00
60-62, 400 e.p.	*5.00 – 5.125	*5.00 – 5.125
KANSAS (For Kansas destinations only)		
U. S. Motor: (a) (Octane Test L-3)		
62 oct. & below	5.125– 5.375	5.125– 5.375
63-66 oct.	5.625– 5.75	5.625– 5.75
67-69 oct.	5.875– 6.00	5.875– 6.00
70-72 oct.	6.25 – 6.375	6.25 – 6.375
†W. TEX.		
U. S. Motor: (a) (Octane Test L-3)		
62 oct. & below	4.875– 5.00	4.875– 5.00
63-66 oct.	5.375– 5.50	5.375– 5.50
67-69 oct.	5.625– 5.75	5.625– 5.75
70-72 oct.	6.00 – 6.125	6.00 – 6.125
†E. TEX.		
60-62, 400 e.p.	*4.875– 5.00	*4.875– 5.00
N. LA. (For shipment within La. & into Ark.)		
U. S. Motor: (a) (Octane Test L-3)		
62 oct. & below	5.375– 5.50	5.375– 5.50
63-66 oct.	5.50 – 5.625	5.50 – 5.625
67-69 oct.	5.75 – 5.875	5.75 – 5.875
70-72 oct.	6.375– 6.50	6.375– 6.50
ARKANSAS (For shipment within Ark. & into La.)		
U. S. Motor: (a) (Octane Test L-3)		
62 octane & below	‡5.50	‡5.50
67-69 oct.	‡6.00	‡6.00
OHIO (Quotations of S. O. Ohio. Delivered anywhere in Ohio).		
U. S. Motor	8.625	8.75
Above 65 oct.	8.875	9.00

Natural Gasoline

(Prices are those to blenders on freight basis shown below. Shipments, however, may originate in other Mid-Continent manufacturing districts, such as Panhandle Texas, S. W. Texas or Kans.)

Prices Effective	Oct. 18	Oct. 11
F.O.B. GROUP 3		
Grade 26-70	4.50	4.50

*Nominal.

‡Only one refiner quoting.

†Refiners report they generally receive from 0.25c to 0.5c per gal. more for gasoline & kerosine for local or differential territory shipment.

(a) In line with National Petroleum News' policy of reflecting general trade practice, the above revisions in octane brackets, determined according to L-3 method, for U. S. Motor gasoline, have been made in the Okla. and Kans. markets, effective Sept. 20, 1937; in North and West Texas, Arkansas, and North Louisiana, Oct. 4. Formerly, octane numbers were: 62 & below, 63-67, and 68-70.

Prices Effective	Oct. 18	Oct. 11
Natural Gasoline (Cont'd)		
F.O.B. BRECKENRIDGE		
Grade 26-70	4.625	4.625
CALIFORNIA (F.o.b. plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	7.50 – 7.75	7.50 – 7.75

Kerosine

WESTERN PENNA.		
Bradford-Warren:		
45 w.w.	5.375– 5.50	5.375– 5.50
46 w.w.	5.50 – 5.625	5.50 – 5.625
47 w.w.	5.625– 5.75	5.625– 5.75
Other districts:		
45 w.w.	5.375– 5.50	5.375– 5.50
46 w.w.	5.50 – 5.625	5.50 – 5.625
47 w.w.	5.625– 5.75	5.625– 5.75
CENTRAL MICHIGAN (Prices f.o.b. Cent. Mich. refinery group basis. Shipments, however, may originate at plants outside Central group).		
47-49 w.w.	5.00 – 5.30	5.00 – 5.30
OKLAHOMA		
41-43	4.00 – 4.25	4.00 – 4.25
42-44 w.w.	4.25 – 4.375	4.25 – 4.375
KANSAS (For Kansas destinations only).		
41-43 w.w.	4.375– 4.50	4.375– 4.50
42-44 w.w.	4.50 – 4.625	4.50 – 4.625
†N. TEX. (For shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments).		
41-43 w.w.	4.25 – 4.375	4.25 – 4.375
†E. TEX.		
41-43 w.w.	*4.00 – 4.125	*4.00 – 4.125
N. LA. (For shipment within La. and into Ark.).		
41-43 w.w.	4.50	4.50
ARK. (For shipment within Ark. and into La.).		
41-43 w.w.	‡4.75	‡4.75
CALIFORNIA		
40-43 w.w.	5.50 – 6.50	5.50 – 6.50

Gas *and* Fuel Oils

WESTERN PENNA.		
Bradford-Warren:		
36-40	4.875– 5.00	4.875– 5.00
Other districts: (Excluding Pittsburgh District Prices).		
36-40	4.625– 4.75	4.625– 4.75
CENTRAL MICHIGAN (Prices f.o.b. Cent. Mich. refinery group basis. Shipments, however, may originate at plants outside Central group).		
P.W. Distillate	4.50 – 5.00	4.50 – 5.00
No. 3 gas oil, str.	4.375– 4.625	4.375– 4.625
U.G.I. gas oil	4.25 – 4.40	4.25 – 4.40
Fuel Oils (Vis. at 100):		
500-700 Vis.	3.375– 3.625	3.375– 3.625
300-500 Vis.	3.50 – 4.00	3.50 – 4.00
100-300 Vis.	3.50 – 4.25	3.50 – 4.25
OKLAHOMA		
No. 1 white	4.00 – 4.125	4.00 – 4.125
No. 1 straw	3.75 – 4.00	3.75 – 4.00
No. 2 straw	3.625– 3.875	3.625– 3.875
No. 2 dark	3.50 – 3.625	3.50 – 3.625
U. G. I. gas oil	*3.375	*3.375
28-30 zero	*3.50 – 3.625	*3.50 – 3.625
28-30	‡$1.35	‡$1.35
24-26	‡$0.925	‡$0.925
18-22	*$0.825–$0.90	*$0.825–$0.90
14-16	*$0.80 –$0.85	*$0.80 –$0.85
KANSAS (For Kans. destinations only).		
No. 1 p.w. fuel oil	4.125– 4.25	4.125– 4.25
10-14 fuel oil	$0.725–$0.775	$0.725–$0.775
N. TEX. (For shipment to Texas and N. Mex.; Group 3 prices quoted on northern shipments).		
No. 1 white	*4.125	*4.125
U. G. I. gas oil	3.00 – 3.125	3.00 – 3.125
24-26	$0.85 –$0.875	$0.85 –$0.875
18-22	$0.80 –$0.825	$0.80 –$0.825
N. LA. (For shipment within La. and into Ark.).		
No. 2	3.50 – 3.625	3.50 – 3.625
20-24	$1.10 –$1.15	$1.10 –$1.15
16-20	$0.95 –$1.00	$0.95 –$1.00
10-14	$0.80 –$0.85	$0.80 –$0.85
ARK. (For shipment within Ark. and into La.).		
No. 2	‡3.75	‡3.75
28-30 gas oil, zero	‡3.50	‡3.50
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.65 –$1.00	$0.65 –$1.00
Light fuel	$0.85 –$1.10	$0.85 –$1.10
Diesel fuel (per gal.)	4.00 – 5.00	4.00 – 5.00
Stove dist. (per gal.)	4.50 – 7.00	4.50 – 7.00
Los Angeles:		
Heavy fuel	$0.60 –$1.10	$0.65 –$1.10
Light fuel	$0.90 –$1.20	$0.90 –$1.20
Diesel fuel (per gal.)	3.50 – 5.00	3.75 – 5.00
Stove dist. (per gal.)	4.00 – 7.00	4.00 – 7.00

Prices Effective	Oct. 18	Oct. 11
Gas and Fuel Oils (Cont'd		
San Francisco:		
Heavy fuel	$1.15	$1.15
Light fuel	$1.25	$1.25
Diesel fuel (per gal.)	5.50	5.50
Stove dist. (per gal.)	7.50	7.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

WESTERN PENNA.

Viscous Neutrals (Viscosity at 70° F.)

200 Vis. (180 at 100°) No. 3 col., 420-425 fl.:		
0 p.t.	27.00 –27.50	27.00 –27.50
10 p.t.	26.00 –26.50	26.00 –26.50
15 p.t.	25.50 –26.00	25.50 –26.00
25 p.t.	24.50 –25.00	24.50 –25.00
180 Vis. (165 at 100) No. 3 col., 410-415 fl.:		
25 p.t.	23.00 –23.50	23.00 –23.50
150 Vis. (143 at 100) No. 3 col., 400-405 fl.:		
0 p.t.	22.50 –23.00	22.50 –23.00
10 p.t.	21.50 –22.00	21.50 –22.00
15 p.t.	21.00 –21.50	21.00 –21.50
25 p.t.	20.00 –20.50	20.00 –20.50

SOUTH TEXAS

Vis.	Color		
Pale Oils:	(*Vis. at 100° F.; p.t. 0*)		
100	No. 1½-2½	5.25 – 5.50	5.25 – 5.50
200	No. 2-3	7.25 – 7.50	7.25 – 7.50
300	No. 2-3	7.75 – 8.00	7.75 – 8.00
500	No. 2½-3½	8.75 – 9.00	8.75 – 9.00
750	No. 3-4	9.25 – 9.50	9.25 – 9.50
1200	No. 3-4	9.75 –10.00	9.75 –10.00
2000	No. 4	10.00 –10.25	10.00 –10.25
Red Oils:			
200	No. 5-6	7.25 – 7.50	7.25 – 7.50
300	No. 5-6	7.75 – 8.00	7.75 – 8.00
500	No. 5-6	8.75 – 9.00	8.75 – 9.00
750	No. 5-6	9.25 – 9.50	9.25 – 9.50
1200	No. 5-6	9.75 –10.00	9.75 –10.00
2000	No. 5-6	10.00 –10.25	10.00 –10.25

Note: South Texas red oil prices shown above cover oils with green cast; blue cast red oils are slightly lower in some cases.

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa basis).

(0 to 10 P.P.)

Vis.	Color		
Pale Oils:			
60-85	No. 2	5.50	5.50
86-110	No. 2	6.00	6.00
150	No. 3	9.00	9.00
180	No. 3	10.00	10.00
200	No. 3	10.50	10.50
250	No. 3	11.50	11.50
280	No. 3	12.50	12.50
300	No. 3	13.00	13.00
Red Oils:			
180	No. 5	9.00	9.00
200	No. 5	9.50	9.50
250	No. 5	10.50	10.50
280	No. 5	11.50	11.50
300	No. 5	11.75	11.75

Note: Viscous oils, 15-25 p.p., generally are quoted 0.5c under 0-10 p.p. oils. Non-viscous oils, 15-25 p.p., generally are quoted 0.25c under 0-10 p.p. oils. Viscous oils (150-300 vis.), No. 4 color, generally are quoted 0.5c above No. 5 color oils.

CHICAGO (Vis. at 100° F.)

Pale Oils **0 to 10 p.p.:

Vis.	Color		
60-85	No. 2	7.25	7.25
86-110	No. 2	7.75	7.75
150	No. 3	10.00	10.00
180	No. 3	11.00	11.00
200	No. 3	11.50	11.50
250	No. 3	12.50	12.50
Red Oils:			
180	No. 5	10.00	10.00
200	No. 5	10.50	10.50
250	No. 5	11.50	11.50
280	No. 5	12.50	12.50
300	No. 5	12.75	12.75

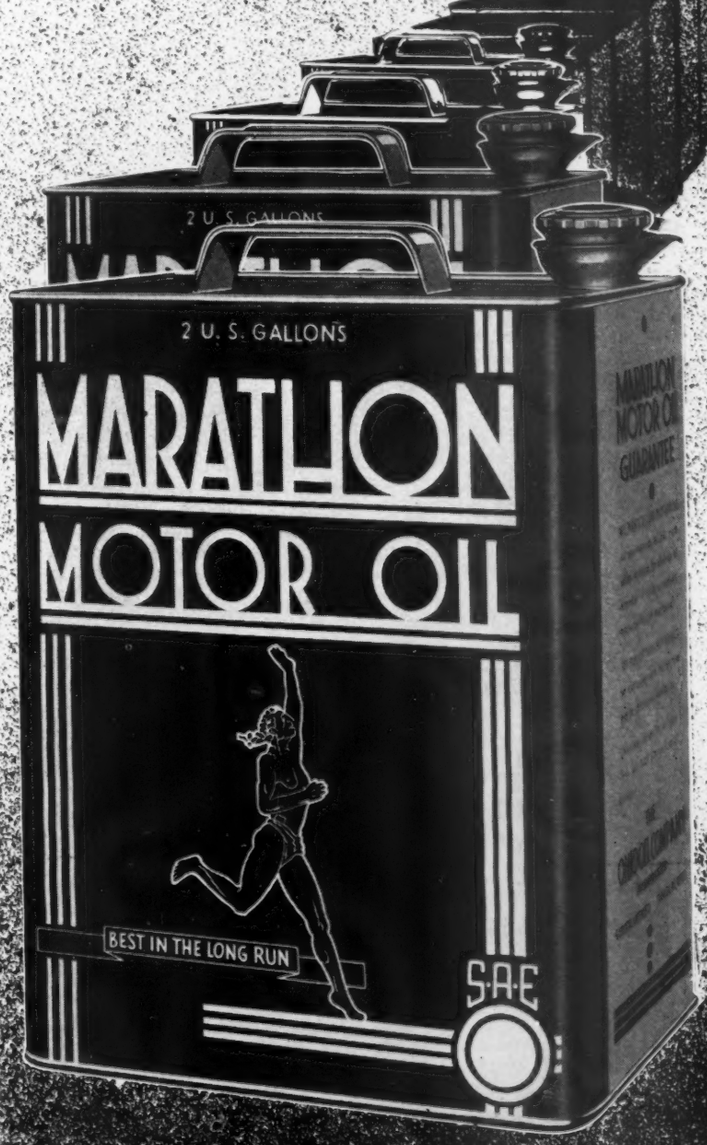
**Viscous oils, 15 to 30 p.p. are quoted 0.5c lower, 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., are quoted 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa basis).

Bright Stocks:		
190-200 Vis. at 210° D	20.00	20.00
150-160 Vis. at 210° D:		
0 to 10 p.p.	17.00	17.00
10 to 25 p.p.	16.00	16.50
25 to 40 p.p.	16.00	16.00
150-160 vis. at 210° E	16.00	16.00

MARATHON
MOTOR OILS



REPEAT SALES

Quality and uniformity in petroleum products are essential to the successful and rapid building of an oil jobbing business. When customers can rely on the quality of the products you sell them and know it will be uniform day after day, month after month - - - they become enthusiastic boosters.

MARATHON MOTOR OILS are of exceptional quality and durability, refined exclusively from Ranger paraffin-base crude which is unsurpassed by any known crude oil for its lubricating properties.

JOBBERS can depend upon the quality and uniformity of any product which bears the famous MARATHON name. Why not inquire about our Exclusive Territory Franchise.

WRITE WIRE PHONE

MARATHON PRODUCTS BEST IN THE LONG RUN

LINCO

THE OHIO OIL COMPANY

GENERAL OFFICES - - - - FINDLAY, OHIO

ROBINSON, ILLINOIS TULSA, OKLAHOMA FT. WORTH, TEXAS

England movement, although some reports of shading of the 7.50 cent tank car price at New York harbor were heard. Some above 65 octane gasoline was reported moving at 7.25 cents in tank cars f.o.b. Baltimore, but traders reported that bulk of sales and quotations as yet were at a minimum of 7.50 cents.

Retail gasoline markets were reported firm in some sections and unsettled in others. So-called unbranded gasolines were selling at 7.9 cents, and branded gasolines at 8.9 cents, excluding taxes, in parts of northern New Jersey.

Coastal

Gasoline Prices Lower

N. P. N. News Bureau

NEW YORK, Oct. 18.—Gasoline cargo markets were inactive at the Gulf Coast during the past week and traders' prices generally dropped 0.125 cent. No open spot market sales were reported, either for domestic or export lifting. Some foreign inquiries were reported, however.

One factor now affecting the Gulf market, several traders said, was the re-entry of Roumania into competition for open market business in Europe. For several months she has been out of the market, insofar as bidding for open business was concerned. Reports were that Roumanian quotations f.o.b. American Gulf were on a par with the low level of those quoted by American suppliers for export lifting.

Activity in the open market at the Gulf on light fuel oils and kerosine was light insofar as actual sales were concerned. However, many traders said this was the result of scarcity of offerings rather than lack of purchases. One cargo sale of No. 2 fuel oil at 4.50 cents f.o.b. Gulf for domestic lifting, made late the week ended Oct. 9, was revealed the past week.

Demand for heavy fuel oils continued light, traders said. Quotations were said to be around $0.85 for Grade C in cargo lots, although no open market sales were reported.

California

Fuel Oil Firm

N. P. N. News Bureau

LOS ANGELES, Oct. 16.—Domestic fuel oil prices at plants in the Los Angeles Basin operating on Wilmington crude oil continued to firm the past week as purchasing companies made bids for the crude at higher than prevailing prices. Spot lots of the high sulfur fuel were available at 60 cents per barrel, but the greater part of this production was reported bringing 65 cents.

Some distress gasoline was being offered by one independent refiner in the Basin at 7.50 cents, exclusive all tax, and one of the largest independents was making deliveries to service stations at 8 cents for a competitive third-grade brand, which would return a net refinery price of 7.50 to 7.75 cents.

The domestic burning oil market was

Fuel Oil . . . . .

N. P. N. News Bureau

CHICAGO, Oct. 18.—Nos. 1, 2 and 3 grades of fuel oil continued to be the most actively sought, and at the same time well held, in the Mid-Western market the second week of October.

Prices for these oils probably do not reflect the good position of these oils. While price advances were not recorded during the week, it was increasingly difficult to obtain supplies at the lows of price ranges.

Sellers generally hoped that tank car prices would not move higher before a tank wagon advance widened the spread between wholesale and retail prices. On the other hand, they feared a loss of consumptive demand to other forms of automatic heat if tank wagon prices are materially advanced during the coming heating oil season.

Industrial grades of fuel were sluggish, both in the Mid-Western and Michigan markets.

* * *

NEW YORK, Oct. 18.—Distributors reported that demand for fuel from home burner owners increased the past week as temperatures dropped.

Seaboard terminal operators said that movement in tank cars and barges was steady. No general changes were reported in tank car or barge prices during the week.

Heavy fuel oil markets continued dull. Buying was reported sluggish. Industrial plants were said to be operating at lower levels than early in the summer.

* * *

TULSA, Oct. 18.—Several refiners in the Mid-Continent reported last week they were ahead of last year's shipping schedule on light fuel oils and still behind on orders. Buyers reported finding no increase of interest among refiners. Available stocks continued to be closely held and open market trading was only in small lots. Prices were steady.

Heavy fuel oils were in better demand, several refiners reported. Railroads apparently were taking more of the oil and industrial users were showing a little more interest. The low cost test industrial fuels were in better demand for northern shipment.

tight with current quotations around the top. Independent plants were asking $1.47 per barrel, or 3.50 cents a gallon for diesel oil in the Los Angeles area and stove distillate carried a minimum price of 4 cents at the same plants.

Offshore inquiry showed some tendency to rest after activity of the past two months. Local suppliers were reported unable to quote on Atlantic foreign inquiry for gas-oil because of low stocks.

Wax

Scale Dull

NEW YORK, Oct. 18.—Crude scale wax markets generally were reported dull during the past week. Traders reported that buying was light for export, but on the other hand that suppliers apparently were not anxious sellers. One trader said that export buyers would take wax if they could get a "bargain," but that there weren't many around.

Price quotations generally were unchanged over the week.

Fully refined wax markets were steady. Buying has been fair, suppliers reported. No changes were reported in prices.

TANK WAGON MARKETS, HEATING OILS

Prices in Effect Oct. 18, 1937

Following are tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

	No. 1	No. 2	No. 3	No. 4
S. O. NEW JERSEY				
Newark, N. J.	*	7.00	7.00	7.00
Atlantic City, N. J.	*	7.00	7.00	7.00
Baltimore, Md.	8.00	7.00	7.00	7.00
Washington, D. C.	8.50	7.50	7.50	7.50
SOCONY-VACUUM OIL CO. INC. (S. O. New York Division)				
New York City	*	7.50	7.50	7.50
Albany, N. Y.	*	7.50	7.50	7.50
Rochester, N. Y.	*	7.50	7.50	7.50
Boston, Mass.	*	7.00	7.00	7.00
Bangor, Me.	*	8.00	8.00	8.00
Manchester, N. H.	*	8.00	8.00	8.00
Burlington, Vt.	*	8.00	8.00	8.00
New Haven, Conn.	*	7.50	7.50	7.50
Providence, R. I.	*	7	7	7

*Prices for No. 1 fuel in S. O. New Jersey and Socony-Vacuum territories same as for kerosine, which see in tank wagon table for various cities; prices change with kerosine

	No. 1	No. 2	No. 3	No. 4
ATLANTIC REFINING				
Philadelphia, Pa.	7.75	7.00	7.00	7.00
Allentown, Pa.	7.75	7.00	7.00	7.00
Wilmington, Del.	8.25	7.50	7.50	7.50
Springfield, Mass.	9.00	7.50	...	7.50
Worcester, Mass.	9.00	7.50	....	7.50
Hartford, Conn.	9.00	7.50	....	7.50

S. O. OHIO

*Ohio Statewide	8.00	8.00	7.50	6.75

Note: S. O. Ohio prices are for hose dumps, bucket dumps are 0.5c per gallon higher.

*Except Cleveland Division and City of Toledo. In Cleveland Division (Cuyahoga, Lake and Geauga counties), No. 1 price is same as statewide; Nos. 2, 3 and 4 are 0.5c higher; No. 5 is priced 0.25c lower than No. 4. In Toledo No. 2 is 0.5c lower than statewide, others same.

S. O. INDIANA

Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	8.8	7.00
Indianapolis	....	*11.8
Detroit	....	7.1
Milwaukee	8	7.3
Minneapolis	7.5	7.5
Sioux City	7.1	7.1
St. Louis	7.5	6.8
Kansas City	6.5	6.5

*Includes state tax of 4c.

Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel, tank car lots, f.o.b. refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Cylinder Stocks (cont'd)

Prices Effective	Oct. 18	Oct. 11
Mid-Continent (cont'd)		
120 Vis. at 210° D:		
0 to 10 p.p.	16.00	16.00
10 to 25 p.p.	15.50	15.50
25 to 40 p.p.	15.00	15.00
600 S.R. Dark Green	5.00 – 7.50	5.00 – 7.50
600 S.R. Olive Green	7.00 – 9.50	7.00 – 9.50
631 S.R.	‡14.50	‡15.00
Black Oil	3.50 – 4.00	3.50 – 4.00
CHICAGO (Viscosity at 210°)		
Unfiltered Steam Refined:		
140	9.00	9.00
160	10.00	10.00
200	11.00	11.00
Bright stocks, 160 vis. at 210. No. 8 color:		
0 to 10 p.p.	18.75	18.75
15 to 25 p.p.	17.75	18.25
30 to 40 p.p.	17.25	17.75
E filtered Cyl. Stock	14.50	14.50

To obtain prices delivered in Chicago, add 0.25c per gal.

‡Only one refiner quoting.

Prices Effective	Oct. 18	Oct. 11
WESTERN PENNA.		
600 S.R. filterable	9.00 –10.25	10.25 –10.75
650 S.R.	13.50 –15.00	15.00 –15.50
600 fl.	14.00 –16.00	16.50 –17.00
630 fl.	18.00 –18.50	20.50 –21.00
600 Warren E	*15.50 –16.50	15.50 –16.50
Bright stock, 145-155 vis. at 210°, 540-550 flash, No. 8 color:		
10 p.t.	19.00 –19.50	21.00 –21.50
15 p.t.	18.00 –18.50	20.00 –20.50
20 p.t.	17.00 –17.50	19.00 –19.50
25 p.t.	16.00 –16.50	17.00 –17.50

Petrolatums

WESTERN PENNA. (Per lb., in barrels, carload lots. In tank cars, 0.5c per lb. less).

Snow white	6.625– 6.75	6.625– 6.75
Lily White	5.625– 5.75	5.625– 5.75
Cream White	4.625– 4.75	4.625– 4.75
Light Amber	2.75 – 2.875	2.75 – 2.875
Amber	2.50 – 2.625	2.50 – 2.625
Red	2.125– 2.375	2.125– 2.375

Wax

Prices Effective	Oct. 18	Oct. 11
WESTERN PENNA. (Per lb. f.o.b. N. Y. basis)		
122-124 w.c. scale, A.m.p.	2.95 – 3.00	2.95 – 3.00
124-126 w.c. scale, A.m.p.	2.95 – 3.00	2.95 – 3.00
OKLAHOMA (Per lb. in bbls.; in a few instances, per lb. in burlap bags).		
124-126 w.c. scale, A.m.p.	3.00 – 3.125	3.00 – 3.125
CHICAGO (In bags, carload lots. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)		
Fully refined:		
122-124	4.65 – 4.75	4.65 – 4.75
125-127	4.90 – 5.00	4.90 – 5.00
127-129	5.05 – 5.15	5.05 – 5.15
130-132	**5.45 – 5.55	**5.45 – 5.55
132-134	**5.70 – 5.80	**5.70 – 5.80
135-137	**6.45 – 6.55	**6.45 – 6.55

**Same prices quoted in bags or slabs loose.

MID-WESTERN TANK CAR MARKET

Prices are those made by Chicago sellers, on Group 3 (Oklahoma) freight basis, although shipments may originate in other South-western or Mid-western refining districts

Gasoline

Prices Effective	Oct. 18	Oct. 11
U. S. Motor:		
62 oct. and below	4.625– 5.00	4.625– 5.00
63-67 oct.	5.00 – 5.50	5.00 – 5.50
68-70 oct. (regular)	5.50 – 5.875	5.50 – 6.00
60-62, 400 e.p.	4.75 – 5.00	4.75 – 5.00
64-66, 375 e.p.	**5.00	**5.00
68-70, 350-360 e.p.	**5.25	**5.25

Kerosine

41-43 w.w.	4.00 – 4.25	4.00 – 4.25
42-44 w.w.	4.125– 4.375	4.125– 4.375

*Nominal

**One seller quoting.

Fuel *and* Gas Oils

Prices Effective	Oct. 18	Oct. 11
Domestic:		
No. 1 p.w.	3.875– 4.125	3.875– 4.125
No. 1 straw	3.75 – 4.00	3.75 – 4.00
No. 2 straw	3.50 – 3.75	3.50 – 3.75
No. 2 dark	3.375– 3.625	3.375– 3.625
No. 3	3.25 – 3.50	3.25 – 3.50
No. 4	$1.05 –$1.10	$1.05 –$1.10
No. 5	$0.80 –$0.85	$0.80 –$0.85
Range oil	4.00	4.00
Industrial:		
No. 4	$0.95 –$1.10	$0.95 –$1.10
No. 5	$0.80 –$0.85	$0.80 –$0.85

Prices Effective	Oct. 18	Oct. 11
Industrial (cont'd)		
No. 6	$0.70 –$0.75	$0.70 –$0.75
U. G. I. gas oil	2.875– 3.25	2.875– 3.25

Naphtha and Solvent

Stoddard solvent	6.875	6.875
Cleaners' naphtha	7.375	7.375
V. M. & P. naphtha	7.375	7.375
Mineral spirits	6.375	6.375
Rubber solvent	7.375	7.375
Lacquer diluent	8.375	8.375

DAILY GASOLINE PRICES

Daily range of gasoline prices as reported in PLATT'S OILGRAM. (Week Ended Oct. 15, 1937)

	Oct. 11	Oct. 12	Oct. 13	Oct. 14	Oct. 15
U. S. Motor, (Octane Number determined according to L-3 Method):					
62 octane and below:					
Oklahoma	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
*North Texas	4.875– 5.125	4.875– 5.125	4.875– 5.00	4.875– 5.00	4.875– 5.00
West Texas	4.875– 5.00	4.875– 5.00	4.875– 5.00	4.875– 5.00	4.875– 5.00
63-66 octane:					
Oklahoma	5.375– 5.50	5.375– 5.50	5.375– 5.50	5.375– 5.50	5.25 – 5.50
*North Texas	5.50	5.50	5.50	5.50	5.50
West Texas	5.375– 5.50	5.375– 5.50	5.375– 5.50	5.375– 5.50	5.375– 5.50
67-69 octane:					
Oklahoma	5.625– 5.875	5.625– 5.875	5.625– 5.875	5.625– 5.875	5.625– 5.875
*North Texas	5.75	5.75	5.75	5.75	5.75
West Texas	5.625– 5.75	5.625– 5.75	5.625– 5.75	5.625– 5.75	5.625– 5.75
70-72 octane:					
Oklahoma	6.00	6.00	6.00	5.875– 6.00	5.875– 6.00
*North Texas	6.00	6.00	6.00	6.00	6.00
West Texas	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125
U. S. Motor, Mid-Western Market (Group 3 Basis):					
62 octane and below	4.625– 5.00	4.625– 5.00	4.625– 5.00	4.625– 5.00	4.625– 5.00
63-67 octane	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50
68-70 octane (regular)	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00	5.50 – 5.875	5.50 – 5.875
Motor Gasoline, 60-64 oct.					
New York harbor	†7.25 – 7.75	†7.25 – 7.75	†7.25 – 7.75	†7.25 – 7.75	†7.25 – 7.75
Philadelphia district	†7.25 – 7.50	†7.25 – 7.50	†7.25 – 7.50	†7.25 – 7.50	†7.25
Baltimore district	†7.25 – 7.75	†7.25 – 7.75	†7.25 – 7.75	†7.25 – 7.75	†7.25 – 7.75
Motor Gasoline, 65 oct. & above					
New York harbor	†7.50 – 8.00	†7.50 – 8.00	†7.50 – 8.00	†7.50 – 8.00	†7.50 – 8.00
Philadelphia district	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50
Baltimore district	†7.50 – 8.00	†7.50 – 8.00	†7.50 – 8.00	†7.50 – 8.00	†7.50 – 8.00
U. S. Motor, 58-62°					
Bradford-Warren (Western Penna.)	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Other districts (Western Penna.)	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
Motor Gasoline, Min. 60 oct.					
Bradford-Warren (Western Penna.)	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75	†7.50 – 7.75
Other districts (Western Penna.)	7.375– 7.75	7.375– 7.75	7.375– 7.75	7.375– 7.75	7.375– 7.75
Motor Gasoline, Min. 65 oct.					
Bradford-Warren (Western Penna.)	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00	†7.75 – 8.00
Other districts (Western Penna.)	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

*For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipment.

†Nominal.

TANK WAGON MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Oct. 18, 1937, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. New Jersey

ESSOLENE

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Atlantic City, N. J.	8	9.5	4	*	9
Newark, N. J.	8	9.5	4	*	9
Annapolis, Md.	9.1	10.6	5	*	9.5
Baltimore, Md.	8.5	10	5	18.5	9
Cumberland, Md.	9.9	12.4	5	*	10
Washington, D. C.	8	9.5	3	16	9.5
Danville, Va.	9.7	12.2	6	*	12.9
Norfolk, Va.	8.5	11	6	*	11.5
Petersburg, Va.	8.8	11.3	6	*	11.7
Richmond, Va.	8.8	11.3	6	*	11.7
Roanoke, Va.	10	12.5	6	*	12.9
Charleston, W. Va.	9.3	11.8	6	*	12.6
Parkersburg, W. Va.	8.6	11.1	6	*	11.2
Wheeling, W. Va.	9.5	11	6	*	12.2
Charlotte, N. C.	9.9	12.4	7	*	12.6
Hickory, N. C.	10.4	12.9	7	*	13
Mt. Airy, N. C.	10.2	12.7	7	*	12.8
Raleigh, N. C.	9.5	12	7	*	12.1
Salisbury, N. C.	10	12.5	7	*	12.7
Charleston, S. C.	8.5	11	7	*	11.1
Columbia, S. C.	9.5	12	7	*	12.1
Spartanburg, S. C.	10.2	12.7	7	*	12.9

*S. O. New Jersey transferred stations to dealers; no prices available.

Price basis to undivided dealers: Dealer t.w. price less 0.5c per gal.

Price basis to commercial consumers: To contract accounts, purchasing at least one full compartment at a time by hose connection: Effective March 12, 1937, in New Jersey, and March 8 in Maryland, District of Columbia, and in Arlington and Fairfax Counties in Virginia, on yearly purchases: from 2,500 to 100,000 gals., consumer t.w. price at time and place of delivery; 100,000 gals. per year, consumer tank car price, plus 0.5c per gal. Generally consumer t.w. price in foregoing states is equivalent of dealer t.w. price, less 0.5c per gal.

Effective May 15, 1937, on Essolene and Esso (by tank wagon) in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax Counties, which see above), commercial consumers taking deliveries of 50 gals. (West Va. 100 gals.) or more at one time will be billed at the posted consumer t.w. price. Deliveries less than 50 gals. (West Va. 100 gals.) will be billed at 4c per gal. over posted consumer t.w. price. Generally, posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Kerosine Discount: 1c off t.w. price for 25 gals or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

SOCONY MOBILGAS

	Consumer Tank Car	"Split" Dealer T.W.	Taxes	Total "Split" Dealer T.W.	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	8.5	10	*5	15	9
Borough of Richmond (Staten Is.)	8.5	10	*5	15	9
Albany, N. Y.	8.5	10	5	15	9
Binghamton, N. Y.	9.25	10.8	5	15.8	9
Buffalo, N. Y.	9.04	10.05	5	15.05	8.5
Jamestown, N. Y.	8.78	11.3	5	16.3	8.25
Plattsburg, N. Y.	8.9	10.9	5	15.9	9.5
Rochester, N. Y.	9.17	10.5	5	15.5	8.5
Syracuse, N. Y.	9.12	10.5	5	15.5	9.5
Danbury, Conn.	8.8	10.3	4	14.3	9
Hartford, Conn.	8.6	10.1	4	14.1	9
New Haven, Conn.	8.5	10	4	14	9
Bangor, Me.	9.1	11.3	5	16.3	9.5
Portland, Me.	8.5	10.8	5	15.8	8.75
Boston, Mass.	8.5	9	4	13	8.5
Concord, N. H.	9.2	11.8	5	16.8	9.5
Lancaster, N. H.	10.1	12.8	5	17.8	10.25
Manchester, N. H.	9	11.3	5	16.3	9.5
Providence, R. I.	8.5	10	4	14	8.5
Burlington, Vt.	8.9	10.9	5	15.9	9.5
Rutland, Vt.	9.2	11.2	5	16.2	9

*Plus 2% city sales tax computed at time of each sale.

Note: Socony-Vacuum has transferred all service stations to dealers; no prices available.

Price basis to undivided dealers: 0.5c less than "split" dealer t.w.

Price basis to commercial consumers: Effective about Nov. 15, 1936 in New York and New England, for tank wagon delivery: monthly purchases of 25,000 gals. or over, pay consumer tank car price at point of delivery, plus 0.5c gal.; monthly purchases of 5,000 to 25,000 gals., pay undivided dealer tank wagon price at point of delivery; monthly purchases of less than 5,000 gals., pay divided dealer tank wagon price at point of delivery. Private consumers pay undivided dealer tank wagon price at point of delivery, plus 2c gal.

Atlantic Refining

ATLANTIC WHITE FLASH GASOLINE

	Commercial Tank Car	All Tax	Total Dealer T.W.	S.S.	Kerosine T.W.
Philadelphia, Pa.	7.5	5	14	17	10.5
Pittsburgh	8.5	5	15.5	20	11
Allentown	8.5	5	15	**	11
Erie	8	5	14.5	**	10
Scranton	8.5	5	15	**	11
Altoona	8.5	5	15.5	**	11
Harrisburg	8.5	5	15	**	11
Williamsport	8.5	5	15.5	**	11
Dover, Del.	...	5	14.5	**	11
Wilmington	...	5	14.5	**	11
Boston, Mass.	...	4	13.5	**	8.5
Springfield, Mass.	...	4	14.3	**	9
Worcester, Mass.	...	4	14.8	**	9
Fall River, Mass.	...	4	13	**	8.5
Hartford, Conn.	...	4	14.1	**	9
New Haven, Conn.	...	4	14	**	9
Providence, R. I.	...	4	14	**	8.5
Atlantic City, N. J.	...	4	13.5	**	9
Camden, N. J.	...	4	13.5	**	9
Trenton, N. J.	...	4	13.5	**	9
Annapolis, Md.	...	5	15.6	**	9.5
Baltimore, Md.	...	5	15	**	9
Hagerstown, Md.	...	5	16	**	10
Richmond, Va.	...	6	17.3	**	11.7
Wilmington, N. C.	...	7	18.1	**	11.3
Brunswick, Ga.	...	7	16	**	*13
Jacksonville, Fla.	...	8	17.5	**	11

*Georgia has kerosine tax of 1c per gal., not included in above price.

**Atlantic Refining transferred stations to dealers; no prices available.

Price basis to undivided dealers: Dealer t.w. less 0.5c per gal.

Price basis to commercial consumers: in Penna. and Delaware, effective Mar. 11, 1937, on yearly gasoline purchases to contract accounts taking full compartment hose deliveries, using 100,000 gals. or more per year, tank car price plus 0.5c per gal.; consumers taking less than 100,000 gals., undivided dealer price. Consumers under contract and not under contract, taking less than full compartment delivery, and consumers not under contract taking full compartment delivery, get divided dealer price. Consumers taking less than 25 gals., t.w. delivery, get 4c above undivided dealer price.

Discount on kerosine: Effective Oct. 29, 1936, in Pennsylvania and Delaware 2c per gal. off t.w. price on t.w. deliveries of 25 gals. or more at one time.

S. O. Ohio

SOHIO X-70 GASOLINE

	All Tax	**Consumer T.W.	†Divided Dlr.	Kerosine T.W.
Ohio State-Wide	5	17	15.5	16	*13.5
Defiance county	5	16	‡	15	....
Erie, Fulton, Hamilton, Henry, Lucas, Ottawa, Sandusky, Williams & Wood counties	5	17	‡	16	....
Counties where prices are below statewide:					
Columbiana	5	16.5	15	15.5	....
Franklin, Knox and Pickaway	5	16	14.5	15	....
Paulding	5	15.5	14	14.5	....

RENOWN GASOLINE (Third Grade)

Ohio State-Wide	5	16.5	15	15.5	....
Defiance county	5	15.5	‡	14.5	....
Erie, Fulton, Lucas, Ottawa, Sandusky, Williams and Wood	5	16.5	‡	15.5	....
Hamilton county	5	17	‡	16	....
Counties where prices are below statewide:					
Columbiana	5	16	14.5	15	....
Franklin, Knox, and Pickaway	5	15.5	14	14.5	....
Paulding	5	15	13.5	14	....
Counties where prices are above statewide: Butler, Clermont, Darke, Greene, Hocking, Miami, Montgomery, Preble and Warren	5	17	15.5	16	....

S. O. Ohio Cont'd

KEROSINE PRICES

(Off Statewide Level)

Kerosine prices are off statewide level in the following counties:

Washington	*13
Allen, Auglaize, Champaign, Columbiana, Darke, Geauga, Greene, Hancock, Hardin, Logan, Mahoning, Mercer, Preble, Putnam, Shelby, Trumbull, Union, Van Wert and Wyandot:	*12.5
Paulding	*12
Ashtabula	*11.5
Fayette, Licking, Madison, Pickaway, Portage and Summit	*9.5

*Kerosine prices include 1c state tax.

**Tank wagon price to commercial consumers, in t.w. deliveries of 25 gals. or more; less than 25-gal. deliveries get s.s. price. Price to undivided dealers is same as to commercial consumers.

Discounts to Commercial Consumers on contract: Effective Aug. 12, thru Ohio, for 20,000 gals. of gasoline or more per month, 1c per gal. off commercial consumer t.w. price. For counties where no commercial t.w. is posted, see following paragraph.

‡Commercial consumer t.w. posted price discont'd and Q.D.A. to t.w. consumers put into effect July 19, 1937, in counties of Defiance, Erie, Fulton, Hamilton, Henry, Lucas, Ottawa, Sandusky, Williams and Wood. For further information, write National Petroleum News.

†This price also to authorized agents, exclusive of 0.5c rental.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices", S. O. Ohio says.

On kerosine, prices to resellers and commercial consumers are posted generally at 3c per gal. below consumer t.w. price in any quantity, when such prices are on state-wide level.

S. O. Kentucky

CROWN GASOLINE

(Regular Grade)

	Consumer T.W.	All Tax	Total Consumer T.W.	Net Dlr.	Kerosine T.W.
Covington, Ky.	13.5	6	19.5	16.5	11
Lexington, Ky.	14	6	20	17	11
Louisville, Ky.	14	6	20	17	10.5
Paducah, Ky.	14	6	20	17	10
Jackson, Miss.	14	7	21	18	*13
Vicksburg, Miss.	13.5	7	20.5	17.5	*13
Birmingham, Ala.	12	*8	20	17	12
Mobile, Ala.	13	*9	22	19	11
Montgomery, Ala.	13	*9	22	19	*14.5
Atlanta, Ga.	14	7	21	18	*12
Augusta, Ga.	14	7	21	18	*14
Macon, Ga.	14.5	7	21.5	18.5	*14.5
Savannah, Ga.	12	7	19	16	*12
Jacksonville, Fla.	12.5	8	20.5	17.5	10
Miami, Fla.	12.5	8	20.5	17.5	12
Pensacola, Fla.	13	*9	22	19	12
Tampa, Fla.	11	8	19	16	10.5

KYSO GASOLINE

(Third Grade)

Covington, Ky.	12	6	18	15.5	....
Lexington, Ky.	12.25	6	18.25	15.75	....
Louisville, Ky.	12	6	18	15.5	....
Paducah, Ky.	12	6	18	15.5	....
Jackson, Miss.	12.5	7	19.5	17	....
Vicksburg, Miss.	12	7	19	16.5	....
Birmingham, Ala.	10.5	*8	18.5	16	....
Mobile, Ala.	10.5	*9	19.5	17	....
Montgomery, Ala.	10.5	*9	19.5	17	....
Atlanta, Ga.	12	7	19	16.5	....
Augusta, Ga.	12	7	19	16.5	....
Macon, Ga.	12.5	7	19.5	17	....
Savannah, Ga.	9.5	7	16.5	14	....
Pensacola, Fla.	11	*9	20	17.5	....

Discounts to tank wagon consumers: Effective Jan. 4, 1937, thru territory, on Crown gasoline, 3c per gal. below consumer t.w. price; on Kyso, 2.5c below.

Discounts on kerosine: Prices in Kentucky are net, but in other states subject to 2c discount.

**Taxes*: in the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Mississippi kerosine prices include 1c state tax. Montgomery kerosine price includes 1c city tax.

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal., in lots of more than 50 bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fee only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3/5c for next 3; 2/5c for next 5; 3/10c for next 15, and 1/5c per gal. in lots over 25 bbls

TANK WAGON MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Oct. 18, 1937, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. Indiana

	Red Crown Total Tax	Dealer Prices Red Crown T.W.	Stano-lind T.W.	Kero-sine T.W.
Chicago, Ill.	4	15.5	13.5	12	10.1
Decatur, Ill.	4	15.5	14	12	10.1
Joliet, Ill.	4	15.5	14	13.5	10.1
Peoria, Ill.	4	15.5	14	13.5	10.1
Quincy, Ill.	4	15.3	13.8	12.4	9.9
Indianapolis, Ind.	5	17.2	15.7	14.7	*14.8
Evansville, Ind.	5	17	15.5	13	*14.6
South Bend, Ind.	5	17.4	15.9	15.4	*13.6
Detroit, Mich.	4	15.4	13.9	13.4	9.8
Grand Rapids, Mich.	4	16.5	15	14.5	10.9
Saginaw, Mich.	4	16.3	14.8	14.3	8.5
Green Bay, Wis.	5	17.2	15.7	14.7	10.8
Milwaukee, Wis.	5	16.8	15.3	14.2	10.4
La Crosse, Wis.	5	16.9	15.4	14.9	10.5
Minneapolis-St. Paul.	5	16.9	15.4	14.9	10.5
Duluth, Minn.	5	17.3	15.8	15.3	10.9
Mankato, Minn.	5	16.9	15.4	14.9	10.5
Des Moines, Ia.	4	15.3	13.8	12.4	*12.9
Sioux City, Ia.	4	15.5	14	13.5	*13.1
Davenport, Ia.	4	15.5	14	13.5	*13.1
Mason City, Ia.	4	15.7	14.2	13.7	*13.3
St. Louis, Mo.	*4	15.2	13.7	11.2	9.8
Kansas City, Mo.	*4	14.9	13.4	12.9	8
St. Joseph, Mo.	*4	14.9	12.4	12	9
Fargo, N. D.	4	16.9	15.4	14.9	11.5
Minot, N. D.	4	18.1	16.6	16.1	12.7
Huron, S. D.	*5	17.3	15.8	15.3	*10.9
Wichita, Kans.	4	14.4	12.9	11.5	8

*Taxes: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax; South Dakota, 0.1c sales tax. State Kerosine taxes: Indiana, 4c; Iowa, 3c, all included in above prices.

Discount to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. prices; all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals., or more, 1.5c off t.w. on Ethyl and Red Crown, and 1c on Stanolind (latter effective June 9, 1937). Minimum delivery is 25 gals.

S. O. Nebraska

STANDARD RED CROWN GASOLINE

	All Tax	T.W. Total	Dealer Total	Kero-sine T.W.
Omaha, Neb.	6	17.9	16.4	10.4
McCook	6	18	14	10
Norfolk	6	18.3	16.8	10.8
North Platte	6	18.7	17.2	11.2
Scottabluff	6	19.4	15.9	11.9

Discounts to commercial consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

ESSOLENE

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kero-sine T.W.
Little Rock, Ark.	8.5	11	7.5	**	11.5
Alexandria, La.	8.5	11	8	**	*12
Baton Rouge, La.	8	10.5	8	22	*12
New Orleans, La.	8	10.5	*10	24	*13
Lake Charles, La.	9	11.5	8	**	*12.5
Shreveport, La.	7.5	10	8	**	*9.5
Lafayette, La.	9	11.5	8	**	*13
Bristol, Tenn.	11	12.25	8	**	14.5
Chattanooga, Tenn.	10.5	13	8	**	13.5
Knoxville, Tenn.	11	13.5	8	**	14
Memphis, Tenn.	9	11.5	8	**	12
Nashville, Tenn.	10	12.5	8	**	11.5

*New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana kerosine prices include 1c state tax; in addition New Orleans has 1c parish tax.

**S. O. Louisiana transferred stations to dealers; no prices available.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective May 15, 1937, thru territory; commercial consumers taking 50 gals. or more at one time will be billed at posted consumer t.w. price; those taking less than 50 gals. at one time will be billed at 4c per gal. over posted consumer t.w. price. Generally, the posted consumer t.w. price will be equivalent to the dealer price less 0.5c per gal.

Humble Oil & Refining Co.

HUMBLE MOTOR FUEL

	T.W.	Taxes	Total T.W.	S.S.	Kero-sine T.W.
Dallas, Tex.	8.5	5	13.5	17	8
Ft. Worth, Tex.	8.5	5	13.5	17	8
Houston, Tex.	9.5	5	14.5	18.5	8
San Antonio, Tex.	8.5	5	13.5	17	8

U. S. Motor Gasoline
(*Third Grade*)

Dallas, Tex.	7	5	12	14	
Ft. Worth, Tex.	7	5	12	14	
Houston, Tex.	8.5	5	13.5	16.5	
San Antonio, Tex.	7	5	12	14	

Price is t.w. price to all classes of dealers and consumers.

Price basis to dealers: to contract dealers consumer accounts off posted retail price: when posted retail price, including all taxes on Esso motor fuel is: 19.1c per gal. and above discount is 4c; 19c to 18.1c, 3.5c, and 18c and below, 3c. Humble motor fuel, 17.1c and above, 4c; 17 to 16.1c, 3.5c; and 16c and below, 3c; U. S. motor fuel, 15.1c and above, 3c; 15 to 14.1c, 2.5c; and 14c and below, 2c.

Continental Oil

	Conoco Bronze Ex-Tax	All Tax	Dealer Prices Conoco Bronze T.W.	Total Demand T.W.	Kero-sine T.W.
Denver, Colo.	12.5	5	17.5	16.5	11.5
Grand Junc., Colo.	15	5	20	19	15
Pueblo, Wyo.	11	5	16	14	10.5
Casper, Wyo.	13	5	18	17	11.5
Cheyenne, Wyo.	13	5	18	17	13
Billings, Mont.	14	6	21	18	15.5
Butte, Mont.	13.5	6	19.5	16.5	15.5
Great Falls, Mont.	15.5	6	21.5	20.5	15.5
Helena, Mont.	15.5	6	21.5	20.5	15.5
Salt Lake City, Utah.	14.5	5	19.5	16.5	16
Boise, Ida.	15.5	6	21.5	20.5	18
Twin Falls, Ida.	15.5	6	21.5	20.5	18
Albuquerque, N. M.	11	†6.5	17.5	16.5	12
Roswell, N. M.	12	†6.5	18.5	15	10.5
Santa Fe, N. M.	13	*7	20	16.5	12
Muskogee, Okla.	10	5	15	13	7
Oklahoma City, Okla.	9	5	14	11	8
Tulsa Okla.	9	5	14	11	7
Ft. Smith, Ark.	10.5	5	15.5	13.5	8
Little Rock, Ark.	10.5	7.5	18	15.125	9.5
Texarkana, Ark.	10.5	5	15.5	12.5	8.5

†Includes city tax of 0.5c.
*Includes 1c city tax.

S. O. California

STANDARD GASOLINE

	T.W.	Taxes	Total T.W.	S.S.	Kero-sine T.W
San Francisco, Cal.	13.5	4	17.5	18.5	11.5
Los Angeles, Cal.	13	4	17	18	9
Fresno, Cal.	14.5	4	18.5	19.5	12
Phoenix, Ariz.	15	6	21	22	†16
Reno, Nev.	15	5	20	21	13
Portland, Ore.	14	6	20	21	13.5
Seattle, Wash.	14	6	20	21	13.5
Spokane, Wash.	17	6	23	24	16.5
Tacoma, Wash.	14	6	20	21	13.5

FLIGHT GASOLINE
(*Third Grade*)

San Francisco, Cal.	12	4	16	17	....
Los Angeles, Cal.	11.5	4	15.5	16.5	....
Fresno, Cal.	13	4	17	18	....
Reno, Nev.	13.5	5	18.5	19.5	....
Phoenix, Ariz.	13.5	6	19.5	20.5	....
Portland, Ore.	12.5	6	18.5	19.5	....
Seattle, Wash.	12.5	6	18.5	19.5	....
Spokane, Wash.	15.5	6	21.5	22.5	....
Tacoma, Wash.	12.5	6	18.5	19.5	....

†Includes 5c state tax.

Discount to dealers: on gasoline, off t.w. price on Standard Ethyl and Standard Gasoline, to 100% dealers, 3c; to split dealers, 2c; on Flight gasoline, both 100% and split dealers, 2c.

On Stanavo Aviation Gasoline, to all classes of dealers, 3c off t.w.

To commercial consumers: off tank wagon price: on single deliveries of 40 gallons and over, Stanavo Aviation, Standard Ethyl and Standard Gasolines, 3c. Flight Gasoline, 2c per gallon. Tank wagon delivery, less than 40 gals., 1c per gal. above posted t.w. price.

On kerosine in tank car, transport truck and trailer delivery, 3c off t.w. price; plant deliveries to jobbers, 2.5c below t.w.

Canada

PRICES OF IMPERIAL OIL LTD.

Per Imperial Gallon, which is 1.2 U. S. Gallons

3-STAR IMPERIAL GASOLINE

	T.W.	Taxes	Total T.W.	Kero-sine T.W.
Hamilton, Ont.	16	6	22	17
Toronto, Ont.	16	6	22	17
Brandon, Man.	22.8	7	29.8	22.3
Winnipeg, Man.	20.5	7	27.5	20.7
Regina, Sask.	22.5	7	29.5	22
Saskatoon, Sask.	25.3	7	32.3	24.8
Edmonton, Alta.	22.5	7	29.5	24.2
Calgary, Alta.	20	7	27	21.5
Vancouver, B. C.	16	7	23	23
Montreal, Que.	15	6	21	17.5
St. John, N. B.	16	8	24	18.5
Halifax, N. S.	16	8	24	18.5

Note: Imperial Oil Ltd. has completed transfer of service stations to dealers; no s.s. prices available.

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

Aviation Gasoline

Following are tank car and/or tank wagon prices of aviation gasoline in principal marketing territories (Stanavo aviation in all territories except Continental Oil and unless otherwise noted). Tax column includes 1c federal tax, and state tax; also municipal taxes as indicated in footnotes. Prices in first four territories do not include state or federal taxes.

S. O. NEW JERSEY

	*Ethyl T.C.	Tank Car	T.W.
Bayonne, N. J.	19.5	9.5	12.5
Baltimore, Md.	....	10	12.5
Washington, D. C.	....	....	13.1
Richmond, Va.	....	....	15.2
Greensboro, N. C.	....	....	15.7
Raleigh, N. C.	....	....	17.1
Charleston, W. Va.	....	....	15.2

*This is Stanavo Ethyl Aviation Gasolin 100 octane number, tank car price.

COLONIAL BEACON OIL CO.

	T.W.
Brooklyn, N. Y.	12.8
Buffalo, N. Y.	14.1
Boston, Mass.	15

S. O. PENNSYLVANIA

Philadelphia, Pa.	12.8
Pittsburgh, Pa.	13.1

S. O. LOUISIANA

New Orleans, La.	13.8
Shreveport, La.	14.1

Prices in above four territories are on a 74 octane grade aviation gasoline except where otherwise noted. An 80 octane product generally brings 0.5c premium and an 87 octane product, 1.5c premium over the 74 octane grade.

Note: S.s. prices in above four territories are generally 6c over t.w. prices. Above t.w. prices are net, with no discounts allowed for quantity purchases. T.w. prices are generally tank car price, plus freight, plus 2.5c per gal.

S. O. OHIO
Thru Ohio

	Consumer T.W.	Tax	Total Consumer T.W.
Stanavo Ethy Aviation:			
73 octane	15.5	5	20.5
80 octane	16.5	5	21.5
87 octane	17.5	5	22.5

Discounts: For delivery on contract to hangar operators and resellers: 2c below consumer posted t.w. price, shown above.

S. O. INDIANA

Chicago, Ill.	14.5	4	18.5
Detroit, Mich.	16	4	20
Milwaukee, Wisc.	14.8	5	19.8
Minneapolis, Minn.	14.9	5	19.9
St. Louis, Mo.	14.2	*3	17.2
Kansas City, Mo.	13.9	*4	17.9
Fargo, N. D.	15.9	4	19.9
Huron, S. D.	15.3	5	20.3

*Includes 1c city tax.
**Includes 0.1c to cover.

HUMBLE OIL & REFINING CO.

	Tank Car
Baytown, Tex. (exclusive of taxes)	8.5

CONTINENTAL OIL CO.

	Dealer	Tax	Total Dealer
Denver, Colo.	15.5	5	20.5
Cheyenne, Wyo.	16	5	21
Helena, Mont.	18.5	6	24.5
Salt Lake City, Utah.	17.5	5	22.5
Albuquerque, N. M.	14	*6.5	20.5

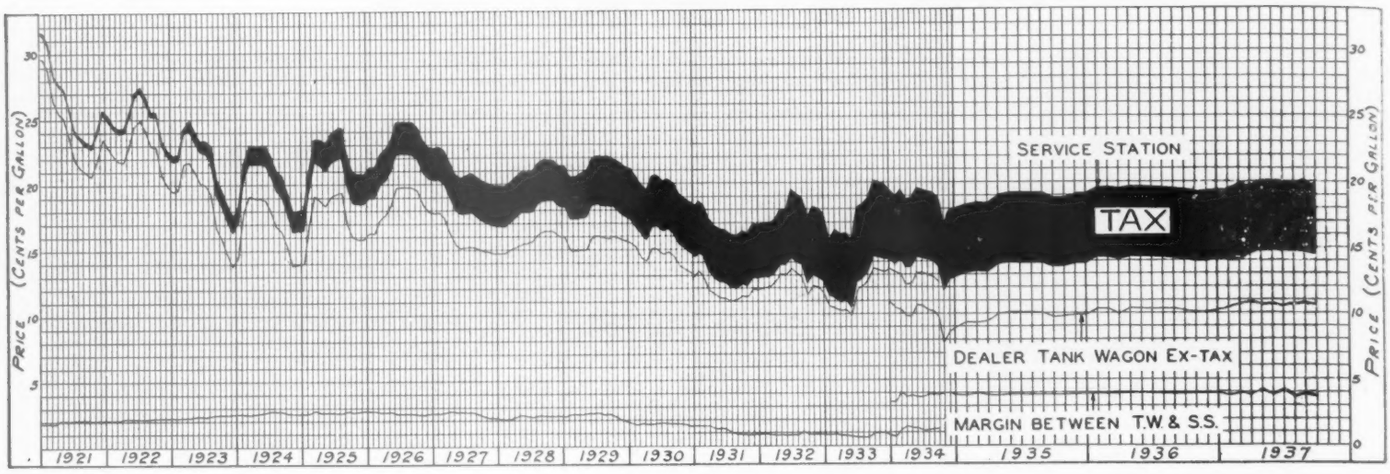
*Includes city tax of 0.5c.

S. O. CALIFORNIA

Phoenix, Ariz.	17	6	23
Los Angeles, Cal.	15	4	19
San Francisco, Cal.	15.5	4	19.5
Reno, Nev.	17	5	22
Portland, Ore.	16	6	22
Seattle, Wash.	16	6	22
Spokane, Wash.	19	6	25

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Trend of Gasoline Prices and Gasoline Taxes, at 50 Representative Cities



S. O. Ohio Drops Posted Commercial Price

CLEVELAND, Oct. 19.—The tank wagon price to commercial consumers, which the Standard Oil Co. of Ohio has been posting statewide since March 15 this year, will be abolished as a posted price, effective Oct. 20, and a tank wagon Q.D.A. to this class of trade re-instated, the company announced today. The statewide Q.D.A. had been abolished co-incident with the establishing of a posted commercial price March 15, but had been re-instated July 19 in 10 counties, and re-instated through the rest of the state, Aug. 12.

The new statewide commercial tank wagon Q.D.A. (quantity discount agreement), to contract accounts, taken for one year or less, is, discount being off posted consumer t.w. price and allowed at time of delivery: 0 to 999 gallons, 1 cent per gallon; 1000 to 19,999 gallons, 1.5 cents; 20,000 gallons or over, 2.5 cents.

There are exceptions to this statewide Q.D.A. in 24 counties. In 12, an additional 1 cent per gallon is allowed for purchases of 20,000 gallons or more per month, if earned, at the end of the month. These 12 counties are: Allen, Auglaize, Champaign, Darke, Logan, Lorain, Mercer, Paulding, Putnam, Scioto, Shelby and Van Wert.

In the other 12 counties, the Q.D.A. varies from the statewide. Further information on these variations can be obtained by writing this publication.

There were no price changes, in connection with the policy announcement.

A commercial consumer tank wagon price is posted, Oct. 20, in these counties; on the three grades of motor gasolines: Allen, Auglaize, Champaign, Darke, Logan, Lorain, Mercer, Paulding, Putnam, Shelby and Van Wert.

TANK WAGON MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Oct 18, 1937, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

Naphtha (In Tank Wagon)

S. O. NEW JERSEY

	Posted Tank Wagon Prices Mineral Spirits	V.M.&P.
Newark, N. J.	12.5	15.5
Baltimore, Md.	15.5	....
Washington, D. C.	15	....

Discounts: Buyers taking following quantities, at one time, get these discounts: Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals. and 3c on over 100 gals. Washington, 2c off to contract buyers.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y.	13	14
New York City	10.5	11.5
Rochester, N. Y.	12	15
Syracuse, N. Y.	14	15
Boston, Mass.	13.5	14
Bridgeport, Conn.	12.5	14
Hartford, Conn.	12	13.5
Providence, R. I.	13.5	14.5

ATLANTIC REFINING CO.

Philadelphia, Pa.	11.5	12.5
Lancaster, Pa.	13	14
Pittsburgh, Pa.	12.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha.

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	13.25	13.75

Note: V.M.&P. Naphtha prices also apply on Dry Cleaners naphtha and special Varnolene; Varnolene and Sohio Solvent 0.5c below these prices. Discounts to contract consumers, off t.w. price: 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

S. O. INDIANA

(*Prices include state and federal taxes*)

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill.	15.8	16.1	15.5
Detroit, Mich.	19.2	18.2	19.3
Kansas City, Mo.	14.4	15.4	14.4
St. Louis, Mo.	14.7	15.7	14.6
Milwaukee, Wis.	19.3	20.3	19.3
Minneapolis, Minn.	19.4	20.4	18

Note: Prices for V. M. & P. apply also to Light Cleaners Naphtha. All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Solvent
Baltimore	11	10
New York Harbor	10.5–11	9.5
Philadelphia district	11	10
Boston	10.5	10
Providence	10.5	10
Ohio points, delivered	9.75	*9.25

*This is on S.R. solvent.

Note: In Ohio, prices on D.C. naphtha and special Varnolene are same as V.M.&P.; on Varnolene and Sohio Solvent, prices are 0.5c less than on V.M.&P.

Latest Changes

From Oct. 12 to Oct. 18 inclusive. Dates and amounts of changes shown. See table for full current prices.

Socony-Vacuum Oil—Mobilgas:

Buffalo, dealer t.w. cut 0.75c, Oct. 15.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes.

Socony-Vacuum Oil—Mobilgas:

Boston, dealer t.w. cut 0.5c, Oct. 9.

S. O. Kentucky—Crown:

Birmingham, cut 2c, Oct. 2.
Tampa, cut 1c, Oct. 2.
Kyso:
Birmingham, cut 1c, Oct. 2.

Continental Oil—Demand:

Pueblo, dealer cut 1c, Oct. 9.
Kerosine:
Tulsa, t.w. up 1c, Oct. 7.

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Eastern Domestic

(Inter-refinery and export prices not included.)

MOTOR GASOLINE

Prices Effective	Oct. 18	
District:	*60-64 Oct.	*65 Oct. & Above
N. Y. harbor	7.25 – 7.75	7.50 – 8.00
†N. Y. harbor	7.00 – 7.25	7.25 – 7.50
Philadelphia	7.25	7.50
Baltimore	7.25 – 7.75	7.50 – 8.00
Norfolk	7.50 – 7.75	7.75 – 8.00
Wilmington, N. C.	7.50 – 7.75	7.75 – 8.00
Charleston, S. C.	7.50 – 7.75	7.75 – 8.00
Savannah	7.25	7.50
Jacksonville	7.25	7.50
Portland	7.75	8.00
Boston	7.25 – 7.50	7.50 – 7.75
Providence	7.25 – 7.50	7.50 – 7.75

*Prices are nominal. †Barge lots.

WATER WHITE KEROSINE

District:			
N. Y. harbor	6.30	Charleston, S. C.	6.25
*N. Y. harbor	6.125–6.18	Savannah	5.75–6.25
Philadelphia	6.25	Jacksonville	5.75–6.25
Baltimore	6.25	Portland	6.75
Norfolk	6.25	Boston	6.40
Wilmington, N. C.	6.25	Providence	6.40

*Barge lots.

†FUEL OILS

	N. Y. harb.	N. Y. harb. barges
No. 1	6.30	6.125– 6.18
Nos. 2-3	5.25	5.125
No. 4	5.25	5.00 – 5.125
No. 5	$1.55 –$1.60	.....
No. 6	$1.35	.....

	Phila. dist.	Balt. dist.
No. 1	6.25	6.25
Nos. 2-3	5.25	5.25
No. 4	4.75 – 5.25	5.25
No. 5	$1.475	$1.55
No. 6	$1.30	$1.35

	Bost. dist.	Prov. dist.
No. 1	6.40	6.40
Nos. 2-3	5.40	5.40
No. 4	5.40	5.40
No. 5	$1.55 –$1.60	.....
No. 6	$1.35	.....

†Fuel oils meet specifications of U. S. Commercial Standards CS12-35.

District:	†Bunker C Fuel	†Diesel Oil
N. Y. harbor	***$1.35	**$2.20
Philadelphia	***$1.30	***$2.20
Baltimore	***$1.35	**$2.20
Norfolk	*$1.35	$2.20
Charleston	$1.30	$2.20
Savannah	*$1.30	$2.20
Jacksonville	*$1.30	$2.20
Tampa	*$1.30	$2.20
Portland	$1.45	$2.35
Boston	***$1.35	**$2.25
Providence	$1.35	$2.25

†In ships' bunkers.

*For barging add 5c per bbl.
**For barging add 6.5c to 7.5c per bbl.
***For barging add 5c to 6c per bbl.

	Gas Oil 28-34 Gravity	Diesel Oil Shore Plants
N. Y. harbor	5.25	5.25
Philadelphia dist.	5.00	....
Baltimore dist.	5.25	....
Norfolk dist	5.25	....
Savannah dist.	....	5.25
Jacksonville dist.	....	5.25

Pacific Export

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gal., except where otherwise noted.)

Prices Effective	Oct. 18	Oct. 11
U. S. Motor, under 65 oct.	6.00 – 6.25	6.00 – 6.25
400 e.p. blend 65 oct. & above	6.25 – 6.50	6.25 – 6.50
*38-40 w.w. kerosine	4.50 – 4.75	4.50 – 4.75
41-43 w.w. kerosine	4.75 – 5.00	4.75 – 5.00
44 w.w. kerosine	5.00	5.00

*150 fire point.

Prices Effective	Oct. 18	Oct. 11
In Cargo lots, per bbl.		
Diesel fuel, 24° & above	$1.40 –$1.45	$1.40 –$1.45
Diesel fuel, under 24°	$1.30 –$1.35	$1.30 –$1.35
*30-34 diesel (gas oil)	$1.45 –$1.50	$1.45 –$1.50
†Grade C fuel oil	$0.85 –$0.90	$0.85

Note: For San Francisco cargo prices, add 5c per bbl. to above cargo prices.

In Ships' Bunkers, or deep tank lots, per bbl.:		
*Diesel fuel oil	$1.625–$1.65	$1.625–$1.65
†Grade C fuel oil	$1.075–$1.10	$1.075–$1.10

*Pacific specification 200. †Pacific specification 400.

Cased Goods: (Per case)		
U. S. Motor	$1.45 –$1.575	$1.45 –$1.575
400 e.p. blend, 65 oct. & above	$1.55 –$1.675	$1.55 –$1.675
*40-43 w.w. kerosine	$1.25 –$1.325	$1.25 –$1.325
Kerosine, p.w.	$1.20 –$1.30	$1.20 –$1.30

*150 fire point.

New York Export

(Prices in cents per gal. in bbls. F.a.s. New York)

CYLINDER OILS (Pennsylvania Products)

Bright stock:		
Light, 25 p.t.	23.50 –24.00	25.50 –26.00
Dark, 25 p.t.	23.00 –23.50	25.00 –25.50
Neutral oil:		
200 3 color, 25 p.t.	32.00 –32.50	32.00 –32.50
150 3 color, 25 p.t.	27.50 –28.00	27.50 –28.00
600 Warren E filtered	23.00 –23.50	23.00 –23.50
600 s.r., unfiltered	17.50 –17.75	17.75 –18.25
650 s.r., unfiltered	21.50 –22.00	22.50 –23.00
600 fl., s.r.	23.50 –24.00	24.00 –24.50
630 fl., s.r.	26.00 –26.50	28.00 –28.50

Wax, Domestic *and* Export

(Prices in cents per lb. Tests made by A. S. T. M. methods. Melting points shown below, however, are A. M. P., 3° higher than A. S. T. M. (E. M. P.) melting points. Export prices are f.a.s. carload lots. Domestic prices are f.o.b. refineries in New York and New Orleans districts, in bags, carload lots, with 0.2c discount allowed for shipment in bulk. Scale, solid and fully refined, slabs in bags.)

Prices Effective	Oct. 18	
	New York	
	Domestic	Export
124-6 Y.C. scale	2.85	2.85
122-4 W.C. scale	2.90 – 2.95	2.90 – 2.95
124-6 W.C. scale	2.90 – 2.95	2.90 – 2.95
123-5 Fully rfd.	4.45	4.375
125-7 Fully rfd.	4.55	4.50
128-30 Fully rfd.	4.80	4.75
130-2 Fully rfd.	5.05	5.00
133-5 Fully rfd.	†5.50	5.50
135-7 Fully rfd.	†5.75	5.75
	New Orleans	
	Domestic	Export
124-6 Y.C. scale	2.85	2.85
122-4 W.C. scale	2.95	2.95
124-6 W.C. scale	2.95	2.95
123-5 Fully rfd.	4.45	4.375
125-7 Fully rfd.	4.55	4.50
128-30 Fully rfd.	4.80	4.75
130-2 Fully rfd.	5.05	5.00
133-5 Fully rfd.	†5.50	5.50

†Shipment either in bags or in bulk.

Gulf Coast

(Prices are f.o.b. ship at Gulf oil terminals representing opinions of traders, except prices specified to the contrary. Prices cover bulk shipments of 20,000 bbls. or more, unless otherwise noted.)

Prices Effective	Oct. 18	Oct. 11
For Domestic shipment:		
MOTOR GASOLINE		
59 oct. & below	*5.875– 6.00	*6.00
60-64 oct. number	*6.00 – 6.125	*6.125– 6.25
65 oct. & above	6.25 – 6.375	6.375
FUEL OILS		
No. 1	5.25 – 5.375	5.25 – 5.375
No. 2	4.50 – 4.625	4.50
No. 4	4.375– 4.50	4.375
KEROSINE		
41-43 w.w.	5.25 – 5.375	5.25 – 5.375
For Export Shipment:		
GASOLINE		
U. S. Motor	5.875– 6.00	6.00
60-62, 400 e.p.	6.00 – 6.125	6.125
61-63, 390 e.p.	6.00 – 6.125	6.125
64-66, 375 e.p.	6.125– 6.25	6.25

*Nominal.

Prices Effective	Oct. 18	Oct. 11
KEROSINE		
44 w.w.	*5.625	5.50
41-43 w.w.	5.25 – 5.375	5.25 – 5.375
41-43 p.w.	5.125– 5.25	5.125– 5.25
GAS AND BUNKER OILS		
For Domestic and/or Export Shipment		
‡26-30 translucent gas oil	4.375– 4.50	4.375
‡30 plus translucent gas oil	4.50 – 4.625	4.50
‡30 plus transparent gas oil	4.50 – 4.625	4.50
Diesel Oil Ship's bkrs.	†$1.90	†$1.90
Grade C bunker oil, for ship's bunkers	†$1.05	†$1.05
Grade C bunker oil, in cargoes	$0.85 –$0.875	$0.85 –$0.875

‡Less than ½ of 1% sulphur. †Barging 5c bbl. additional at some Gulf ports.

MEXICAN CRUDE AND BUNKER OILS

(F.o.b. Steamer, Tampico)

Heavy Panuco crude, taxes to be paid	*$1.00	*$1.00
Grade C bunker oil, ship's bunkers, taxes paid	$1.05	$1.05

MID-CONTINENT LUBRICATING OILS

(Prices in cents per gal. in bbls. f.a.s. Gulf oil terminals. In drums and new barrels, 0.5c to 1c higher per gal. in some instances.)

190-200 vis. D 210 brt. stock	25.50	25.50
150-160 vis. D 210 brt. stock:		
0-10 p.p.	22.50	22.50
10-25 p.p.	21.50	22.00
25-40 p.p.	21.50	21.50
150-160 vis. E 210 brt. stock	21.50	21.50
120 vis. D 210 brt. stock	20.50	20.50
180 vis. No. 3 color neutral:		
0-10 p.p.	16.50	16.50
15-30 p.p.	16.00	16.00
200 vis. No. 3 color neutral:		
0-10 p.p.	17.00	17.00
15-30 p.p.	16.50	16.50
600 s.r. olive green	12.50	12.50
600 s.r. dark green	10.50	11.00
631 s.r.	21.50	22.00

SOUTH TEXAS LUBRICATING OILS

(Vis. at 100° F., pour point 0. Tanker, f.o.b. Gulf oil terminals, for export shipment.)

Unfiltered Pale Oils:		
Vis. Color		
100 No. 3	5.50 – 5.75	5.50 – 5.75
200 No. 3	7.25 – 7.50	7.25 – 7.50
300 No. 3	7.75 – 8.00	7.75 – 8.00
500 No. 3½	8.75 – 9.00	8.75 – 9.00
750 No. 4	9.25 – 9.50	9.25 – 9.50
1200 No. 4	9.75 –10.00	9.75 –10.00
2000 No. 4	10.25 –10.50	10.25 –10.50
Red Oils:		
Vis. Color		
100 No. 5-6	5.50 – 5.75	5.50 – 5.75
200 No. 5-6	7.25 – 7.50	7.25 – 7.50
300 No. 5-6	7.75 – 8.00	7.75 – 8.00
500 No. 5-6	8.75 – 9.00	8.75 – 9.00
750 No. 5-6	9.25 – 9.50	9.25 – 9.50
1200 No. 5-6	9.75 –10.00	9.75 –10.00
2000 No. 5-6	10.25 –10.50	10.25 –10.50

Note: Red oil prices shown above cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 lbs., British sterling; to U. S. ports in cents per bbl.)

Rates Effective Oct. 18

	Crude &/or Fuel		Refined Oil &/or Spirits	
	‡Last Paid	Owners Ask	Last Paid	Owners Ask ‡
Gulf-U.K./Cont.‡	25/	25/	25/	25/9-26/6
Aruba-U.K./Cont.‡	20/6	21/6-22/	21/6	22/-23/
Gulf-N. Atlantic** (not E. of N. Y.): Hvy. Crude & Fuel, (10 to 19.9 gravity)	32c	32c-33c	....	....
Light Crude, (30 Grav. or Lighter)	28c	28c-29c	....	....
Gasoline	....	....	32c	30c-31c
Kerosine	....	....	33c	31c-32c
Light Fuel	....	....	34c	32c-33c

Note: Dirty boat quotations are enlarged to cover, "Fuel and Light Crude" quotations.

‡Continental ports in range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate; Tampico 2c to 3c per bbl. additional.

*Nominal.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency

(Effective Oct. 12, 1937, except Corning Sept. 2, 1937)

Penna Grade Oil in Southwest Penna. Pipe Line.....$2.05
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$2.00
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.85
Corning Oil in Buckeye Pipe Lines (Ohio)...$1.27

Posted by Other Companies

Tide Water Pipe Co., Ltd.
Bradford-Allegany district (Penna. and N. Y.) (Effective Oct. 12, 1937).....$2.35
*The Pennzoil Co.: (Effective Oct. 12, 1937)
Penna. Grade Oil in National Transit Lines*$2.35
Ashland Oil & Transportation Co.:
Somerset Oil in Ashland Lines (Ky.):
(Effective Jan. 28, 1937)
Big Sandy River.....$1.42
Kentucky River.....$1.50

*The Pennzoil Co. posts $2.35 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $2.30 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.

Midland, Midland County (July 23, 1937)...$1.27

Posted by Simrall Pipe Line Corp.

(Effective July 22, 1937)
West Branch, Arenac, and equal grades.....$1.09
(Effective July 23, 1937)
Beaverton, Crystal, Greendale, Porter and equal grades.....$1.27
Buckeye.....$1.245
(Effective July 1, 1937)
Billings and Tobacco.....$1.395

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

(Effective Jan. 28, 1937)
Illinois, Princeton.....$1.35
Lima.....$1.25
Owensboro (Western Ky.).....$1.40

Posted by Stoll Oil Refining Co.

(Effective Feb. 1, 1937)
Stoll Pipe Line Oil (Ky.).....$1.40

CANADIAN FIELDS

Posted by Imperial Oil Limited

Western Ontario

(Effective Sept. 9, 1933)
Petrolia.....$2.10
Oil Springs.....$2.17

Alberta—Turner Valley

(Prices f.o.b. field tankage)

(Effective Sept. 1, 1937)
Clear Naphtha, 65 grav. & above.....$2.36

Crude Oil & Discolored Naphtha

40-40.9°	$1.36	53-53.9	$1.62
41-41.9	1.38	54-54.9	1.64
42-42.9	1.40	55-55.9	1.66
43-43.9	1.42	56-56.9	1.68
44-44.9	1.44	57-57.9	1.70
45-45.9	1.46	58-58.9	1.72
46-46.9	1.48	59-59.9	1.74
47-47.9	1.50	60-60.9	1.76
48-48.9	1.52	61-61.9	1.78
49-49.9	1.54	62-62.9	1.80
50-50.9	1.56	63-63.9	1.82
51-51.9	1.58	64-64.9	1.84
52-52.9	1.60	65° & higher, for discolored naphtha only	2.36

Note: Clear naphtha: 22 color; 10 lbs. vapor pressure, Reid method; 90% recovery; end point, 410°. Discolored naphtha: same specifications as for clear naphtha except color.

MID-CONTINENT

Posted by Stanolind Crude Oil Purchasing Co., Jan. 28, 1937

	(In Oklahoma-Kansas)*	(In North-North Central Texas)
Below 29	$1.06	$0.96
29-29.9	1.08	0.98
30-30.9	1.10	1.00
31-31.9	1.12	1.02
32-32.9	1.14	1.04
33-33.9	1.16	1.06
34-34.9	1.18	1.08
35-35.9	1.20	1.10
36-36.9	1.22	1.12
37-37.9	1.24	1.14
38-38.9	1.26	1.16
39-39.9	1.28	1.18
40 & above	1.30	1.20

Above Stanolind prices met as follows:
Jan. 28, Continental Oil Co. met in Okla., Kans., and North Texas. Sinclair-Prairie met in North Texas and North Central Texas, Jan. 28, Stanolind's North Texas schedule. Same date, The Texas Co. met in North-North Central Texas

Note: Stanolind prices in Okla.-Kans. are for quantities computed by 97% tank tables. In Texas, 100% tank tables are used effective Oct. 1, 1937, volume corrected to 60° F., and deduction for full b.s. & w. content.

*Effective Aug. 1, 1937, for Otis-Albert pools Rush-Barton counties, Kans., 13c less.

Posted by Carter Oil Co.

In Oklahoma

(Effective Jan. 28, 1937)

Below 25	$0.98	33-33.9	$1.16
25-25.9	1.00	34-34.9	1.18
26-26.9	1.02	35-35.9	1.20
27-27.9	1.04	36-36.9	1.22
28-28.9	1.06	37-37.9	1.24
29-29.9	1.08	38-38.9	1.26
30-30.9	1.10	39-39.9	1.28
31-31.9	1.12	40 and above	1.30
32-32.9	1.14		

Above Carter schedule met Jan. 28 by the following companies: Sinclair-Prairie, Shell and Barnsdall in Oklahoma-Kansas; Skelly Oil in Kansas; Tide Water in Oklahoma; Pure Oil in Oklahoma-Kansas, beginning with below 24 at $0.98 and ending with 40 & above at $1.30.

Posted by Magnolia Petroleum Co.

(Effective Jan. 28, 1937)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.98 and ending with 40 & above, at $1.30.

In Texas: North and North Central, including Burkburnett, Archer, Henrietta, Electra, Comanche and Olden, same gravity and price schedule as Stanolind in North Texas, which see under Stanolind, beginning with below 29 at $0.96 and ending with 40 and above, at $1.20.

Beaumont, Tex.

(Effective Oct. 1, 1937)

Below 21°	$0.95	27-27.9	$1.15
21-21.9	0.98	28-28.9	1.17
22-22.9	1.01	29-29.9	1.19
23-23.9	1.04	30-30.9	1.21
24-24.9	1.07	31-31.9	1.23
25-25.9	1.10	32-32.9	1.25
26-26.9	1.13	33-33.9	1.27
		34 & above	1.29

TEXAS FIELDS

Posted by Humble Oil & Refining Co.

(*West Central Texas)

(Effective Jan. 28, 1937)

Below 29	$0.96	35-35.9	$1.10
29-29.9	0.98	36-36.9	1.12
30-30.9	1.00	37-37.9	1.14
31-31.9	1.02	38-38.9	1.16
32-32.9	1.04	39-39.9	1.18
33-33.9	1.06	40 and above	1.20
34-34.9	1.08		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Shell Petroleum Corp., effective Jan. 28, posts Humble's above schedule on Fisher county crude, plus these five lower grades, beginning with below 25 gravity at $0.88; 25-25.9, $0.90; 26-26.9, $0.92; 27-27.9, $0.94, and 28-28.9, $0.96; rest of schedule same as Humble's in West Central Texas.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

East Central Texas

(Effective Jan. 28, 1937)

Below 29	$1.03	35-35.9	$1.17
29-29.9	1.05	36-36.9	1.19
30-30.9	1.07	37-37.9	1.21
31-31.9	1.09	38-38.9	1.23
32-32.9	1.11	39-39.9	1.25
33-33.9	1.13	40 and above	1.27
34-34.9	1.15		

*Including Anderson, Cherokee, Limestone, Navarro counties.

Same date, Sinclair-Prairie met in Mexia Humble's above schedule.

PANHANDLE TEXAS

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

	Gray County	Carson-Hutchinson
Below 35	$0.96	$0.91
35-35.9	0.98	0.93
36-36.9	1.00	0.95
37-37.9	1.02	0.97
38-38.9	1.04	0.99
39-39.9	1.06	1.01
40 & above	1.08	1.03

Jan. 28, above prices met by Sinclair-Prairie and Magnolia in the entire area and by Continental in Carson-Hutchinson and by Texas Co. in Panhandle Sweet, same as Humble's Gray Co. and on Panhandle Sour, same as Carson-Hutchinson.

EAST TEXAS

(Effective May 22, 1937)
Stanolind, Humble, Shell, Sinclair-Prairie, Texas Co., and Magnolia.....$1.35

Shell also posted on Jan. 28, in Livingston area, Polk County, Texas, $1.27.

NORTHEAST TEXAS

(Posted by Humble, Jan. 28, 1937)

Talco.....$0.73

(Posted by Magnolia, Jan. 28, 1937)

Cass County and Panola County, Tex:
Same gravity and price schedule as S. O. Louisiana posts for Rodessa, La., which see under that company.

(Posted by The Texas Co., Jan. 28, 1937)

Cass County.....$1.25

WEST TEXAS AND NEW MEXICO

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

(Including Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler and Upton Counties, Texas and Lea county, New Mexico).

Below 26	$0.78	33-33.9	$0.94
26-26.9	0.80	34-34.9	0.96
27-27.9	0.82	35-35.9	0.98
28-28.9	0.84	36-36.9	1.00
29-29.9	0.86	37-37.9	1.02
30-30.9	0.88	38-38.9	1.04
31-31.9	0.90	39-39.9	1.06
32-32.9	0.92	40 & above	1.08
Pecos, West Texas			$0.91

Jan. 28, Magnolia met Humble in Crane, Upton, Howard, Glasscock, Mitchell and Winker.

Shell Petroleum Corp., on Jan. 28, met Humble in Crane, Glasscock, Howard, Pecos (except Yates shallow pool), Winkler, and Upton counties, Tex., and in Lea County, N. Mex. On Jan. 28, Shell posted in Yates shallow pool in Pecos county, Tex., $0.81. June 4, 1937, Shell added Ector county to West Texas postings.

Jan. 28, Stanolind Oil & Gas Co. met Humble in Hendrick field, Winkler county.

Jan. 28, Texas Co. met Humble in Ward and Winkler counties, Tex., and Lea County, N. M.

April 20, 1937, Sinclair Prairie met Humble in Ward and Winkler, Tex. and Lea, N. M., counties, except that its gravity schedule ends with 36 and above, at $1.00.

Posted by Continental Oil Co.

(Effective Jan. 28, 1937)

Artesia, Jackson and Maljamar pools, N. M...$0.90

COLORADO

(Posted by Continental Oil Co.,
Effective Jan. 28, 1937)

Ft. Collins and Wellington

Below 29	$1.01	35-35.9	$1.15
29-29.9	1.03	36-36.9	1.17
30-30.9	1.05	37-37.9	1.19
31-31.9	1.07	38-38.9	1.21
32-32.9	1.09	39-39.9	1.23
33-33.9	1.11	40 & above	1.25
34-34.9	1.13		

Cannon City and Florence, Col.....$1.10

SOUTH AND SOUTHWEST TEXAS

Posted by Humble Oil & Refining Co.

(Effective Jan. 28, 1937)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski fields.....$1.09
Pettus.....$1.37 Van Zandt.....$1.10

(Effective Nov. 1, 1936)

Heyser heavy...$0.90 Placedo heavy..$0.90
Heyser light..... 1.15 Taft..... 0.95

Shell Pet. Corp. on Jan. 28, posted $1.09 in Salt Flat district, Tex.

Anahuac, Dickinson, Flour Bluff and Turtlebay

(Effective Jan. 28, 1937)

Below 31	$1.16	36-36.9	$1.28
31-31.9	1.18	37-37.9	1.30
32-32.9	1.20	38-38.9	1.32
33-33.9	1.22	39-39.9	1.34
34-34.9	1.24	40 and above	1.36
35-35.9	1.26		

Jan. 28, Magnolia met Humble in Darst Creek; posted $1.00 in Luling; $1.12 in Lytton Springs; $1.27 for Cleveland, Liberty county, Tex.; $1.15 in Hardin, Liberty county, Tex.

Jan. 28, 1937, The Texas Co. met Humble in Darst Creek.

Posted by Humble

Conroe, Raccoon Bend, Tomball and Satsuma
(Deep sand crudes)
(Effective Jan. 28, 1937)

Below 29	$1.20	35-35.9	$1.34
29-29.9	1.22	36-36.9	1.36
30-30.9	1.24	37-37.9	1.38
31-31.9	1.26	38-38.9	1.40
32-32.9	1.28	39-39.9	1.42
33-33.9	1.30	40 & above	1.44
34-34.9	1.32		

Jan. 28, Magnolia met Humble in Tomball and Texas Co. met Humble in Conroe, beginning with 35-35.9 gravity.

Posted by Humble

Mirando, Heavy and Light
(Effective July 6, 1937)

Below 21	$0.96	31-31.9	$1.18
21-21.9	0.98	32-32.9	1.20
22-22.9	1.00	33-33.9	1.22
23-23.9	1.02	34-34.9	1.24
24-24.9	1.04	35-35.9	1.26
25-25.9	1.06	36-36.9	1.28
26-26.9	1.08	37-37.9	1.30
27-27.9	1.10	38-38.9	1.32
28-28.9	1.12	39-39.9	1.34
29-29.9	1.14	40 & above	1.36
30-30.9	1.16		

July 6, Magnolia posted same schedule as Humble in Mirando.

July 6, 1937, Texas Co. posted for Duval-Mirando, $0.96 for below 21, plus 2c differential, to $1.12 for 28 & above.

(Continued on next page)

CRUDE OIL MARKETS

(Continued from preceding page)

NORTH LOUISIANA-ARKANSAS

Posted by Standard Oil Co. of Louisiana

(Effective Jan. 28, 1937)

(In Caddo, Homer, Haynesville, Sabine, De Soto, Sarepta, Carterville, El Dorado, Bunkie, and Miller county).

Below 25	$0.90	33-33.9	$1.08
25-25.9	0.92	34-34.9	1.10
26-26.9	0.94	35-35.9	1.12
27-27.9	0.96	36-36.9	1.14
28-28.9	0.98	37-37.9	1.16
29-29.9	1.00	38-38.9	1.18
30-30.9	1.02	39-39.9	1.20
31-31.9	1.04	40 and above	1.22
32-32.9	1.06		

Rodessa, La.

(Effective Jan. 28, 1937)

Below 25	$0.93	33-33.9	$1.11
25-25.9	0.95	34-34.9	1.13
26-26.9	0.97	35-35.9	1.15
27-27.9	0.99	36-36.9	1.17
28-28.9	1.01	37-37.9	1.19
29-29.9	1.03	38-38.9	1.21
30-30.9	1.05	39-39.9	1.23
31-31.9	1.07	40 and above	1.25
32-32.9	1.09		

Choctaw and Darrow

Jan. 28, 1937, initial posting; same schedule as Humble posts in Mirando, Tex., which see.

Smackover, Ark	$0.90
Urania, La. (La. Oil Refg. Co., Jan. 10, '36)	0.97
Tepetate, La. (Continental Oil, Jan. 28, '37)	1.24

Jan. 28, 1937, Magnolia met S. O. La.'s No. La.-Ark. gravity and price schedule in Pine Island, Haynesville, Bull Bayou and Cotton Valley, La., and in Eldorado and Rainbow districts, Ark.; and met S. O. La.'s Rodessa prices; and in Lockport, Iowa, Cameron Meadow, La., posted Humble's gravity and price schedule on Mirando.

Jan. 28, The Texas Co. met S. O. La. in N. La., except that its gravity schedule begins with below 27 at $0.94. It posted $1.37 for Garden Island, La., $1.24 for LaFitte, La. and $0.90 for Smackover.

°GULF COASTAL FIELDS

Posted by Humble Oil & Refining Co. and The Texas Co.

	(Effective Jan. 28, 1937) Humble	Texas	Saxet (Humble) (July 6 '37)
Below 18	$0.95	$0.90	....
18-18.9	for	0.92	....
19-19.9	below	0.94	....
20-20.9	21°	0.96	$1.01
21-21.9	0.98	0.98	1.03
22-22.9	1.01	1.01	1.05
23-23.9	1.04	1.04	1.07
24-24.9	1.07	1.07	1.09
25-25.9	1.10	1.10	1.11
26-26.9	1.13	1.13	1.13
27-27.9	1.15	1.15	1.15
28-28.9	1.17	1.17	1.17
29-29.9	1.19	1.19	1.19
30-30.9	1.21	1.21	1.21
31-31.9	1.23	1.23	1.23
32-32.9	1.25	1.25	1.25
33-33.9	1.27	1.27	1.27
34-34.9	1.29	1.29	1.29
35-35.9	1.31	for	1.31
36-36.9	1.33	oil	1.33
37-37.9	1.35	34°	1.35
38-38.9	1.37	and	1.37
39-39.9	1.39	above.	1.39
40 and above..	1.41	....	1.41

Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

°Humble's prices apply in these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Plymouth, Rabbs Ridge, Raccoon Bend (shallow sand), Refugio light and †heavy, Sour Lake, Spindletop, Sugarland and West Columbia. †Except these grades of Refugio heavy: effective July 6, 1937: Below 20, $0.95; 20-20.9, $1.01; 21-21.9, $1.03; 22-22.9, $1.05; 23-23.9, $1.07; 24-24.9, $1.09; and 25-25.9, $1.11; rest of schedule same as other Gulf Coastal crude.

Jan. 28, Sinclair-Prairie met above Humble schedule in full.

July 6, 1937, The Texas Co. posted for Refugio, which includes Greta, Saxet and Taft: $1.01 for below 21, plus 2c differential, to $1.17 for 28 & above.

Texas Co. postings in Gulf Coastal Texas include: Arriola, Five Corners, Ganado, Humble, Liberty, Magnet, Manvel, Markham, Mauritz, Pickett Ridge, Port Neches, Sour Lake, West Columbia and Withers. In Gulf Coastal Louisiana: Bay St. Elaine, Caillou Island, Dog Lake, Four Isle, Gillis, Horseshoe Bayou, Iberia, Lake Barre, Lake Pelto, Leesville and Port Barre.

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.

(Effective Jan. 28, 1937)

Salt Creek, Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma, Kansas which see under Mid-Continent crude on previous page.

Greybull-Torchlight	$1.30
Iles, light, Col.	1.18
Iles, heavy	1.12
Hogback, N. M.	1.33
Big Muddy	1.23
Elk Basin, light	1.30
Grass Creek, light	1.30
Frannie light	0.82

(Effective Nov. 4, 1936)

Grass Creek, heavy	$0.62
Frannie heavy	0.62
Hamilton Dome, Wyo.	0.57

Pondera, Mont., (Postings discontinued July 1, 1936, but Stanolind pays price posted by Ohio Oil for Kevin-Sunburst, less 20c per bbl.)

Posted by Ohio Oil Co

(Effective Jan. 28, 1937)

Elk Basin, Wyo.	$1.30
Grass Creek, light	1.30
Rock Creek	1.205
Lance Creek	0.97
Sunburst, Mont.	1.20

Posted by °International Refg. Co.

Cut Bank, Mont.

(Effective Jan. 28, 1937)

Below 35°	$1.34	38-38.9	$1.42
35-35.9	1.36	39-39.9	1.44
36-36.9	1.38	40 and above	1.46
37-37.9	1.40		

°Texas Co. subsidiary.

Posted by Continental Oil Co.

(Effective Jan. 28, 1937)

Cat Creek, Mont.	$1.40
Big Muddy, Wyo.	1.18
Lance Creek, Wyo.	0.97

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 25, 1935, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936; Elk Hills effective June 22, 1936; El Segundo and Wilmington, Oct. 15, 1937

Gravity	Signal Hill (Long Beach) El Segundo †Wilmington	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Ollinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills °°Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$0.80	0.79	0.74	0.78	0.79	0.80	0.76	....	....	0.80	0.76	0.76	0.77	0.78	---	0.70	....	0.70	0.70	0.70	0.70	0.70	---
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	---	.70	....	.70	.70	.70	70	.70	---
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	---	.70	---	.70	.70	.70	70	.70	---
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	---	.70	---	.70	.70	.70	70	.70	---
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	---	.70	....	.70	.70	.70	70	.70	---
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	---	.85	.76	.78	.77	.78	---	.70	.70	.74	.74	.74	74	.71	.70
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	---	---	.70	.78	.78	.78	78	.72	.70
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	---	.73	.82	.82	.82	82	.74	.70
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	---	.77	.87	.87	.87	86	.78	.72
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	---	.80	.92	.92	.92	90	.82	.76
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	---	.84	.97	.97	.97	94	.86	.79
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	---	.88	1.01	1.01	1.01	98	.90	.83
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	---	.91	1.06	1.06	1.06	1 02	....	---
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	---	.96	1.06	.95	---	.95	1.10	1.10	1.10	1 06	....	---
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	---	.99	1.15	1.15	1.15	1.10	....	---
29-29.9	1.17	1.15	.93	1.18	1.18		1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	---	1.02	1.20	1.20	1.20	1.14	....	---
30-30.9	1.21	1.19	.95	1.22	1.21		1.21	1.17	.95	....	....	....	1.07	1.17	1.08	---	1.06	1.25	1.25	1.25	1.18	....	---
31-31.9					1.24		1.24	1.22	.97	....	....	....	1.11	1.21	1.12	---	1.09	1.29	1.29	1.29			
32-32.9	°Elwood Terrace			....	1.27		1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	---	1.13	1.34	1.34	1.34	Kettleman Hills		
33-33.9	....	1.28	....	....	....		---	1.32	....	....	....	....	1.18	1.28	1.20	---	1.17	1.38	1.38	1.38	....	1.19	---
34-34.9	....	1.32	....	....	....		---	1.37	---	....	....	....	1.22	1.32	1.25	---	1.20	....	....	....	....	1.23	---
35-35.9	....	1.35	....	....	....		---	1.42	....	....	....	....	1.25	....	1.29	---	....	....	....	....	....	1.27	---
36-36.9	....	1.39	....	....	....		---	1.46	....	....	....	....	1.29	....	1.33	---	....	....	....	....	....	1.31	---
37-37.9	....	1.43	....	....	....		---	1.51	....	....	....	....	1.32	....	1.37	---	....	....	....	....	....	1.35	---
38-38.9	....	....	....	....	....		---	1.56	....	....	....	....	1.36	....	1.42	---	....	....	....	....	....	1.39	---
39-39.9	....	....	....	....	....		---	1.61	....	....	....	....	1.40	....	....	---	....	....	....	....	....	1.43	---
40-40.9	....	....	....	....	....		---	1.66	---	---	---	---	1.43	....	---	---	---	---	---	....	....	....	---

F.O.B. Standard Pipe Line

°F. o. b. ship.

‡Also McKittrick. Kern River, Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted. **Except Lakeview Area. †Wilmington prices differ on gravities below 18.9. Prices are: 14-16.9, $0.75; 17-17.9, $0.77; and 18-18.9, $0.79; rest of schedule same as Signal Hill.

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Coming Meetings

General Expositions

The Greater Texas and Pan American Exposition, Dallas, June 12 to Oct. 31.

Oil Meetings—Expositions

National Tax Assn., 30th annual conference, The Lord Baltimore Hotel, Baltimore, Md., Oct. 25 to 28.

Indiana Independent Petroleum Assn., annual convention, Hotel Severin, Indianapolis, Oct. 27, 28.

Society of Automotive Engineers, annual dinner, Commodore Hotel, New York City, Oct. 28.

Mid-Continent Oil & Gas Assn. of Texas, annual meeting and convention, Dallas, Texas, Oct. 29 and 30.

National Automobile Show, Grand Central Palace, New York City, Oct. 27, to Nov. 3.

American Association of Petroleum Geologists, Pacific Section, Los Angeles, Calif., Nov. 4 and 5.

Society of Automotive Engineers, Regional Transportation Meeting, Newark, N. J., Nov. 6 to 12.

National Motor Truck Show, Newark, N. J., Nov. 6 to 12.

American Petroleum Institute, 18th annual meeting, Stevens Hotel, Chicago, Ill., Nov. 8 to 12.

American Trucking Assn., Inc., Private Carriers Div., Oil Field Haulers Div., Louisville, Ky., Nov. 15 to 18.

Oil Traders Assn. of New York, New York, Nov. 16.

American Institute of Chemical Engineers, annual meeting, St. Louis, Mo., Nov. 17, 18 and 19.

National Asphalt Conference, Memphis, Tenn., week of Dec. 6.

American Society of Mechanical Engineers, New York, Dec. 6 to 10.

Exposition of Chemical Industries, Grand Central Palace, New York, N. Y., Dec. 6 to 11.

Society of Automotive Engineers, National Production Meeting, Hotel Durant, Flint, Mich., Dec. 8, 9 and 10.

Nebraska Petroleum Marketers, Inc., Omaha, Nebr., Dec. 7, 8 and 9.

American Chemical Society, Division Organic Chemistry, Richmond, Va., Dec. 28, 29 and 30.

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Northwest Petroleum Assn., North Dakota Division, Minot, N. D., Jan. 24 and 25.

Northwest Petroleum Assn., Minnesota Division, Hotel Radisson, Minneapolis, Jan. 27 and 28.

American Assn. of Petroleum Geologists, 23rd annual meeting, Roosevelt Hotel, New Orleans, La., March 16 to 18.

International Petroleum Exposition, Tulsa, Okla., May 14 and 21.

Safe Driver Awards

NEW YORK, Oct. 18.—The Esso Marketers group have 234 drivers on the company's Roll of Honor for having operated their vehicles for at least five years without an accident. The drivers include motor tank salesmen, drivers, commission agents and others operating company equipment. A substantial proportion of these drivers had completed more than 10 years of driving without a single accident, it was stated.